Issue 105 • 10 November 1990 • 70p

NEW COMPUTER EXPRESS

WIN
AN ACORN ARC
FULL DETAILS ON PAGE 82

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

THIS WEEK

ATARI
Dealers slam new STs
Plus... A chess trainer to make you the master

AMIGA
Could there be a bargain in store for A500 owners?
Plus... Breathe new life into an A1000

PC
As 486 machine prices plummet, could you end up with one on your desk?

ARCHIMEDES
How do two top laser printing systems compare?

AMSTRAD'S 16-BIT GAMES MACHINE

In a daring move Alan Sugar is taking on the Amiga and ST with a new PC-compatible games computer

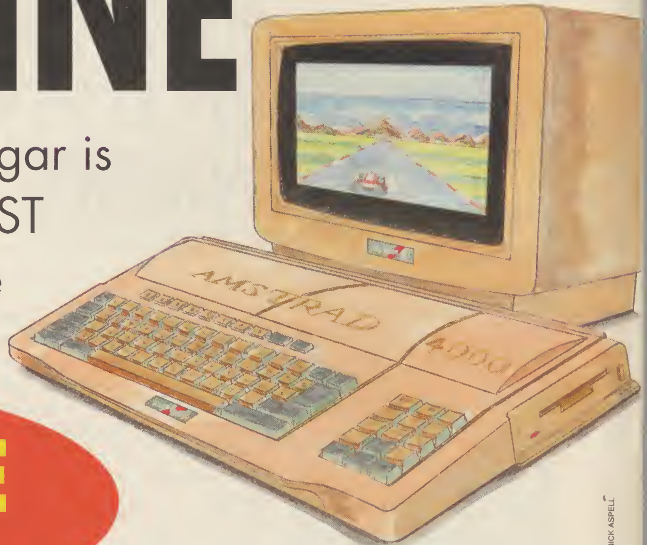
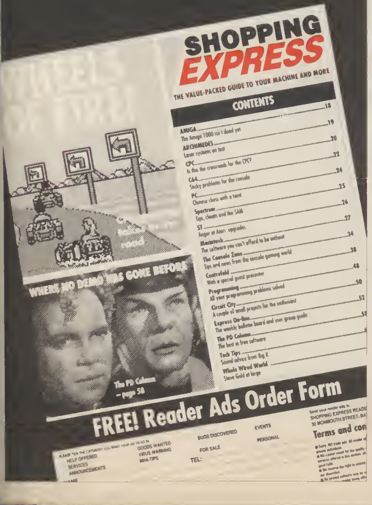


ILLUSTRATION BY NICK ASPELL

EXCLUSIVE
details inside

PLUS
52 PAGES OF BARGAINS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THE VALUE-PACKED GUIDE TO YOUR MACHINE AND MORE
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FREE! Reader Ads Order Form

BIG IS BETTER?

Is Unix really so wonderful? We investigate...

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BLUE FILMS
THE SOHO CINEMA
PRICE BUSTER
RECORDS-TAPE

CITIES ON DISK

Can a computer show you a good time?

INSIDE: Tech Tips, The PD Column, Whole Wired World, Express On-line, Circuit City, The Console Zone, Programming series, Games Week, a column for your machine and more... there's so much in it!

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frontend

edited by Colin Campbell

Big Bird goes silicon

Can you remember being at an age when the most desirable object in the whole world was a bumper colouring book bursting with line drawings of dinosaurs and cuddly bears?

Children today aren't so sophisticated that these pleasures have become passé, but inevitably, computers have edged their way into the picture.

This week sees the launch of a series of computerised colouring books from fledgling UK firm I-D which is importing ST, Amiga, PC and C64 colouring programs from Dallas-based software house Merit. CPC games are also planned, although the Speccy's dismal colour capabilities have left it ignored.

Kids will initially be treated to a colouring affair based on The Turtles, followed by three Sesame Street games. The deliciously ridiculous Big Bird will feature heavily, as will a whole host of those extraordinary muppets.

To play, kids must simply click on the on-screen pallette and re-click on the section of the drawing they wish to fill in. I-D boss Trevor Scott said: "People with home computers have been looking for something to amuse younger members of the family for years. There's a lot of good educational stuff around, but it's not always that much fun.I feel sure this will keep active children quiet and happy for hours on end."

Prices are £10 for 8-bit versions and £20 for 16-bits. Call 0207 71417. ■

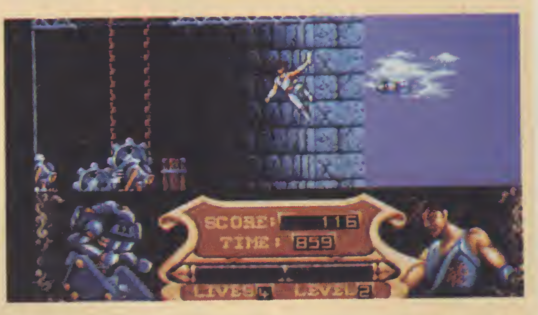
FREE FALLING PHILIPS

Philips is giving away free printers and DTP software with every purchase of a PCD 300 or 200 desktop PC in its 'Free Fall Printer Promo'.

During the promotion, which runs until the end of the year, the Philips PCD 300 series of 386SX based machines will be bundled with the NMS 1461 24-pin dot matrix printer – a saving of £450. And an NMS 1433 9-pin dot matrix printer with the AT-compatible PCD 200 machine, saving buyers £250. Also included in the package is the GST's*Timeworks Publishing Lite* software worth £50.

The prices remain unchanged with the AT-compatible PCD series at £1,299 and the 386SX-based PCD series at £1,799. ■

Strider II strides out



Who can forget the blood sizzling violence of arcade smash Strider? Now gamers who have managed to calm down from the original are girding their loins for the sequel, due for release any time now.

In *Strider II* there's even more hacking, slaying and flaying, but now we're offered special weapons for those hard-to-shift aliens. The US Gold title is being released on the ST, Amiga, C64, Spectrum and CPC. ■

Time costs money

Times are hard for supercomputer manufacturer Cray. The American company has just reported a loss of $12,667,000 for the third quarter of 1990, which adds up to a net loss of $38 million for the past year.

Statisticians will note that this adds up to $4,337 every hour, or $1.20 for every single second of the year. In the time it took you read this snippet, Cray lost 15 bucks. ■

WEATHER COMPUTER WRONG AGAIN!

Were you quivering with fear a couple of weeks ago at reports of another mega-storm sweeping toward our shores?

If you remember, the computers at Bracknell's Meteorological Office had predicted a nasty old spot of weather, not disimilar to those dreadful atmospheric fermentations of 1987 and 1989. Fortunately for us the hardware got it wrong.

This, however, was not particularly good news for those jolly chaps who had cited the sophistication of their technology when warning the newspapers of inclement weather. When no storm occurred hacks promptly started banging out stories poking fun at computers and so-called Artificial Intelligence; few had forgotten that it was the same computers which had failed to warn of previous storms.

Max Merson of the London Weather Centre admitted that the computer had "slightly erred", but explained it could only act on information received.

But Barry Parker, spokesman for the Met, was more forthright: "There's nothing wrong with our computers and there was no error," he said. "The computer model is run on information gathered from 250,000 observation points. That's a very big equation and we can never be 100 per cent accurate, these things just happen."

So could a computer of the future overcome these inadequacies?

"No, it could not." ■

Battle of bosses

US spreadsheet rivals Lotus and Borland were in a marketing battle recently.

Borland's boss Philippe Khan started it all at a New York City IBM User Group (NYPC) meeting on 15 October when he handed out copies of Borland's latest software and referred to a copyright dispute with Lotus.

Two days later Jim Manzi, Lotus' boss, addressing the same audience, attacked the legal issue and handed out copies Lotus' latest offering.

Attendees said that perhaps Kahn knowingly put Manzi in a difficult position, before going home to try their new software. ■

Sexy ad makes Aussies mad

A furious row has broken out in Australia, following the publication of a blatantly sexist ad for a CD-ROM drive published in leading magazine *PC Week*.

The double page spread consisted largely of a near naked woman; we say near-naked because, in fairness, she was wearing (need we say where?) a Compact Disc.

PC Week reportedly received high levels of complaints and withdrew the ad after two weeks. One reader told on-line service Newsbytes: "The whole thing is objectionable, it's demeaning to women and doesn't do a thing to sell the product."

British companies are not immune to sexist advertising. Games publisher US Gold and business firm Sage are among those firms which have been picked up by the Advertising Standards Authority for presenting tacky ads. ■

Cheap hardware

Bargain hunters trying to track down a cheap games machine might be tempted by new mail order firm, Eurotek.

It has gathered some 60 ex-demo PC Engine consoles which are being sold at the very attractive price-point of £60 (these gadgets normally fetch between £160 and £200).

Old cartridges are also being sold at the half price tag of £12.99. Boss Andrew Smales claims all are in excellent nick. Call him on 0743 243789. ■

APPLE IS OUR LOGO SAY BEATLES

The Beatles and Apple Computer are in court this week, fighting over a fruit.

Apple Corps, the company set up by John, Paul, George and Ringo in 1963, alleges that Apple Computer, purveyor of the Macintosh, has ripped off its distinctive logo. Although both symbols are similar, no-one had bothered to bring in the lawyers until Apple Computer started using its logo on musical products two years ago (*Express* passim).

Way back in 1981 the two had recognised the similarities and drawn up an agreement, thus pre-empting any legal shenanigans. Now Apple Corps reckons Apple Computer's use of the logo on musical hardware infringes that agreement.

Apple Corps is owned by the three surviving Beatles and John Lennon's estate. They are asking the judge for an injunction preventing Apple using the symbol on MIDI products and for substantial damages. The trial is expected to last 12 weeks.

The original Apple Corps logo remains synonymous with the late 1960s. All post-1967 Beatles records were marketed by Apple, as were those of top popsters of the time.

Apple Computer's more colourful logo was designed by joint-boss Steve Jobs when he set up his company in 1975. ■

House preference

MPs have woken up to the advantages of computing, with nearly 50 per cent now owning at least one PC.

According to a House of Commons select committee report on computers, published last week, 295 MPs said they owned computer equipment.

British computers scored most favourably, with 158 respondents admitting to owning an Amstrad and 107 opting for Apricot machines. Fifty MPs use Italian jobs from Olivetti and only 31 have an IBM.

In the software stakes *WordStar* came tops followed by *WordPerfect* and *LocoScript*. Sixty eight MPs are real computer addicts with three or more pieces of kit, 85 have two computers and 116 have only one.

In a similar report published five years ago only 94 MPs said they owned a computer, a 68 per cent increase. ■

DREAMING OF A DIGITAL FUTURE

DIGITAL
DREAMS
EXCITING NEW STORIES FROM THE COMPUTER IMAGINATION INTERFACE
EDITED BY DAVID V BARRETT

For some curious reason, books about computers have a reputation for being just a wee bit dull. Not so with a new effort called *Digital Dreams*.

It's an anthology of short stories about computers and the effect they have on us. Some 20 works of fiction have been packed into the paperback covering science-fiction, horror, history, mystery and even spoof. Writers include Terry Pratchett, Dianna Wynne Jones and the improbably named Storm Constantine.

Titles such as Bronze Casket for a Mummified Mouse and The Quenderghast Bullian Algebraic Calculator crop up, and it's all a bit strange. If you fancy a read call publisher Hodder & Stoughton on 071-636 9851. ■

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Is this monster operating system really the way computing is going, or is it a Seventies anachronism? – page 14

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THE RUSSIANS

Are the Soviets soon to be reckoned with on the computer market? Keith Pomfret spent a week in Russia, visiting Leningrad and Moscow and talking to computer people.

Thirty years ago we shook our heads at the funny out-of-date cars and televisions that the Japanese were starting to export to the West. With these post war relics came Japanese students who quietly studied our designs and methods and learned our marketing strategem

With the Japanese dominating the motor shows and the high street electronic industry in the 1990s, we now look a little closer at the chaps who are exporting the funny out-of-date Lada car and radios that look like a prop from a sixties sit-com.

It's easy to think of the Soviets as a race of people queuing for cabbages, coffee and vodka, and one that puts the majority of its national product into a gargantuan space program and a bigger land-based army. Even Glasnost and Perestroika haven't blown away the mutual xenophobia between East and West.

It seems a long way off now, but with the speed that things are developing in Gorbachev's empire, it could see us looking away from Japan and Big Blue to Russia and Big Red.

The Soviet Union is a million miles away from us in terms of culture, politics and lifestyle. But if you look closely on a map, the three major cities in Russia are only one and a half times the distance to the South of France. By ship, air or road the transportation costs and timings from the USSR could make the difference in profit margin in a competitive market.

The new East-West initiatives offer unusual market opportunities to the West and buckets full of technology to the East.

Back in the labs, the boffins in the USSR are gratefully grabbing the de-regulated Western computer technology available to them and teaching it to jump through hoops. In a year or two they claim that they will be designing the hoops too.

Surplus manufacturing capability in military factories is turning to the more peaceful job of producing computers that will maybe help the Soviets win the marketing wars to come. The Russian Bear, far from being a lumbering creature, has shown a fair turn of speed in the race to the home and business computer market of the next century.

But that is the future.

Until recently, the only widely available computers in the USSR were clones of some of the Western 8-bit models.

Mikhail Ossetinski, director of Leningrad based InterCompex said: "Up to now we have used technology based on the Sinclair Spectrum. It is cheap, well documented and simply understood and was an ideal machine to start with."

InterCompex builds the Hobbit Computer, a Spectrum based system that retains full Spectrum compatibility, but adds a host of on-board features, some not even found as standard on 386 PCs in the UK. Ossetinski winked: "If that's what we can do with a Spectrum, imagine what we'll be doing with Amigas in a couple of years time."

InterCompex took up the Spectrum design because in Leningrad alone, there were more than 20 different 'home grown' Spectrums. The Spectrum was the first viable computer that could be carried into the Soviet union in a bag or briefcase without breaking the bank. Enthusiasts worked with solder and wire to produce working clones.

• Mikhail Ossetinski, director of InterCompex in Leningrad.

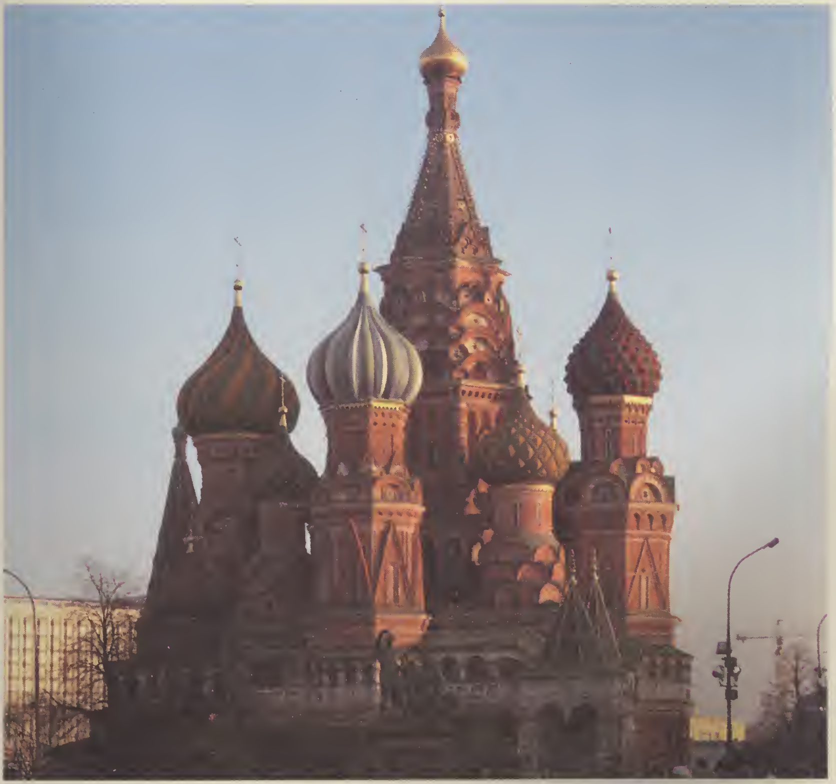
With all this expertise to hand, InterCompex and other Soviet companies took Spectrum technology as the de facto standard. As their needs were greater than the average Spectrum user in the UK and they had no access to the whizzy desk top PCs in the West, some interesting hybrid designs and ideas appeared.

The Hobbit is used in the Soviet Union as an educational machine, but realising that PC technology would be along soon, it was designed to network with desktop PCs.

A network in a Soviet classroom has the teacher controlling a dozen Hobbits with a Soviet-made PC. The software built into the Hobbit allows any machine to take control of the network if the PC is unavailable and work can be monitored across the full network.

Multimedia is on the menu too with a school TV studio in situ and planned links with the computer monitors

Soviet technical people have been able to specialise on upgrading existing technology. InterCompex designer Dmitri Mikhailov said: "We've had to do great things with little technology. From the Spectrum was born the Hobbit. We have developed a games console to match. We cannot buy off-the-shelf, we have to make." Asked about other machines such as the C64 and CPC series he said: "They weren't available so we didn't


• St Basil's cathedral in Red Square, Moscow – a prime example of traditional Russian architecture – but will tradition take second place to the new Soviet dream – computers?

Research and Development

Research and Development can be an expensive and time consuming business. It is in this department that the Soviets are most innovative. Instead of spending large amounts of cash on costly programs, they stay with existing Western technology, enhancing and adapting it to their requirements. This saves time and cash and assures them of systems compatible with the Western market place so important to their need for hard currency. It is policy to copy Western chip designs, not to create new ones. ▨

Currency Restrictions

The currency in the USSR is the Rouble. This is a restricted currency that cannot be taken out of the Soviet Union. For Western Companies investing in the USSR, the Roubles that they earn must remain in Mother Russia. This makes it difficult for a Western company to invest in the USSR.

The Soviets are happy to accept Western 'hard' currency such as the Pound Sterling and Dollar and Western consumer and technology goods, but as payment is generally offered in Roubles, this means that the Western company is tied to investing cashflow and profits behind the parted iron curtain.

Barter and bargain deals are a way around these currency restrictions with Western companies taking saleable goods or services in exchange for their products and expertise.

Another way to work in harmony with the USSR's hard currency magnet tactics is a joint venture. No Western businessman can spend long in the USSR before a joint venture is suggested. This is a company formed by an 'approved' Soviet company and a Western company and it may trade to the mutual benefit of the partners on both sides. ▨

What's my pound worth?

It's difficult to pick a true value for Western currency in the USSR as there are several standards. At Leningrad airport, the official money exchange rate in the hard currency duty free shop is 1.15 Roubles to £1 Sterling.

A few miles away in the Intourist Hotel Sovetskaya, the tourist bank offered an exchange rate of 10 Roubles to £1 Sterling.

A rather scruffy unshaven individual in his early twenties kept a vigil on the hotel and offered tourists a 'good' rate of 18 Roubles to the £1 Sterling.

Various other exchanges were available. Apparently the highest 'black market' rate was 32 Roubles to the £1. ▨

S ARE COMING

use them. Some schools got Japanese MSX computers, but we didn't use them."

Around Leningrad and Moscow, PCs are appearing in hotels, offices and in people's homes. PC owners are proud of their machines and happily work using Cyrillic versions of popular software. There's no evidence of techno culture shock and Soviet PC users seem settled to the new technology.

New fast and powerful machines may be thin on the ground even in the big cities like Moscow, Leningrad and Kiev, but the Soviet users and developers keep a wary eye on the Western computer press (when magazines are available) and are already planning the next generation of Soviet 286, 386 and even 486 machines.

Part of their philosophy is to produce maximum results from minimum effort. Many of the Soviet built PCs that I saw had Taiwanese monitors and generic disk drives.

By working this way, the Soviets are capable of producing highly specified machines in a very short time. On the downside, the supply and reliability of Soviet made components has a bad reputation to live down. Many of the generic parts currently used in the USSR have to be bought for hard cash.

Such is the value of a PC in Kiev that when I was shown one in someone's home, we couldn't help but notice the precautions taken against its theft. The front door of the high-rise flat was fabricated from 7mm sheet steel with security deadlocks, combinations and a frame that would do justice to a high street bank. Someone would always remain in to 'guard' it.

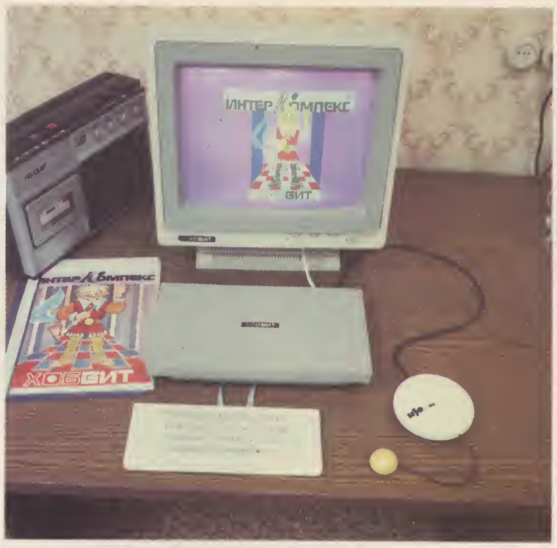
Later, we were told by a foreign national working in the USSR: "You can have someone assassinated here for 2,000 Roubles. It won't be a tidy job, but it will be done. A PC/XT is worth over 60,000 Roubles ... or 30 lives". The value of a computer was stressed even further by the fact that an 60,000 Roubles is equivalent to 38 years of an average working wage.

Apart from a few Atari 8-bits, the majority of machines that I saw were PCs or spectrum clones. The reported influx of second-hand CP/M machines wasn't noticeable and the Soviets have their eyes firmly on the future. Ossetinski told us there were only 12 Macintoshes in the Soviet Union.

I tracked these down to the offices of a Moscow magazine and found a DTP operation using the latest Macintosh technology and software. This was a joint venture with a Dutch company, but the multi-national editorial staff had taken to this sort of publishing and were proud to be turning out a product comparable with magazines elsewhere in the world.

Mikhail Sokolov, Managing Editor said: "This magazine goes to members of the Supreme Soviet as well as a large circulation abroad. We publish in Russian and English and are read by the most influential people in the Soviet Union."

A race that looked to be run and won by the Japanese giants and the huge multinationals from the US has suddenly spawned a new contender. As the Cold War warms up, the gloves will be off for a more gentle and subtle invasion. The next generation of top end PCs may come from the land where Roubles reign.



• The Spectrum compatible games console – manufactured in the USSR and a UK launch imminent.

The East goes on show

I'd conveniently arrived in Moscow in the middle of the Soviet Communications Show which roughly equates to any of the big PC shows at Earl's Court or Olympia.

Inside Moscow's massive Expo Centre were the all so familiar corporate logos looking a little strange from their translation to Cyrillic Script. The stands could have been transported from any Western PC show and the glossy ads announced 286, 386 and 486 PCs.

The chains protecting the stands were a little disconcerting, but in a land where queuing is the norm, life is governed by regulation and Western goods are the exception rather than the rule, the Soviet businessmen seemed happy enough at the prospect of rubbing shoulders with the recently deregulated technology.

Soviet goods looked old and lumpy compared with some of the new products on display from the UK, US and Europe. Very few youngsters prowled the aisles, the emphasis being on business suits and hard nosed business. A single corner of one stand boasted a couple of Arcade Consoles ... Soviet style and acted like a veritable magnet to those under 25 (and some older too).

An interesting event that reinforced the thought that the USSR may be more than a thorn in the side of the Rising Sun.

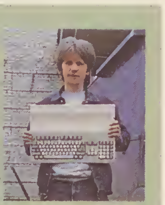
МЕЖДУНАРОДНАЯ ВЫСТАВКА
ИНФОРМАТИКА
90

• A cyrillic logo marks the entrance to the Soviet Communication Show.

СОЛОН СОФТВЕР,ИНК.

• Russians of all ages check out what companies have to offer at one of the hundreds of stands at the show.

Quote unquote



•Dmitri Mikailov

Software/ hardware designer (and proud owner of one of four Amigas in Leningrad) Dmitri Mikhailov had this to say:

"Schools don't have names, they have numbers." (former pupil of the 2458 academy)

"For a normal Russian citizen, Amiga is Fantastic. It is from God, not from people"

"The price of a blank 3.5-inch disk is one tenth of a month's salary and they're only available on the black market, not in the shops."

"The only Amiga software in the USSR is stuff cracked by Polish Hackers."

"The whole of Poland is full of hackers. Not Czeckoslovakia, Mongolia or Vietnam, always Polish ... I don't know why"

Education – IT Soviet style

Computers aren't part of the compulsory school curriculum in the USSR and indeed a school with a well equipped computer science laboratory is very lucky. As well as the small official allocation of educational computers, there are much sought after industrial sponsorships. Soviet companies take a school under their wings and provide computer equipment and software.The sponsorships are paid for by regional government. A school thus blest will be able to offer its students a place in the Soviet computer bom of the 1990s.

Students in Soviet schools are allocated a couple of hours study a week, but a teacher confided: "Students are back at night after school and they'll stay as long as we let them."

Piracy or Public Property?

To a traveller to the USSR from the UK, the cavalier attitude that the Soviets take to copyright and what we would call piracy, amounts to a severe culture shock.

The principles of socialism as practised in the USSR dictate that everything belongs to everyone and thus if you need a program, you take a copy of it. There are no copyright laws as such and it isn't considered wrong to take a program, microchip or piece of hardware and adapt or clone it to your own use.

This makes companies in the west wary of Soviet ventures so in a decision unprecedented in communist countries, regulations are planned from 1991 to protect the copyright of companies investing in the USSR.

The three ton pocket calculator

The Science Museum last week began the construction of a three ton computer, which will only have the computing power of a pocket calculator, and won't even be as fast.

The reason behind this apparent folly is that the machine in question is actually a full size Difference Engine built to original designs as drawn up by Charles Babbage in 1847.

Babbage's designs have much in common with modern electronic computers, but the mathematician failed to complete any of his engines. The Science Museum has been planning its experiment for some months (*Express* 99), now it wants to find out if the original designs would have worked.

"It is widely believed that Babbage failed because of the limitations of 19th century technology," says Doron Swade, curator of computing at the museum. "We have set out to prove that these machines could have worked in Babbage's day."

The museum hopes to have finished the engine for the 200th anniversary of Babbage's birth next July. When completed the engine will be three metres long and two metres high and will feature 4,000 parts.

It will cost £500,000 to construct, about equal in value to the £17,000 the Government of the day gave Babbage for his project, prompting Disraeli, then Chancellor of the Exchequer, to comment that the only use he could see for the machine was to "calculate the vast sums of public money which had been wasted on it". ▩

Faulty BT on-line service suspended

British Telecom's on-line directory enquiry service has been temporarily suspended after it was found to contain easily accessible sensitive information.

The system is being re-jigged to get rid of a feature that allows users to find the address of people with ex-directory numbers.

Before the suspension it was possible for users to find anyone's address, even if they were ex-directory, by simply tapping in the relevant area code. A terrorist, for example, could have found the address of targetted personnel. BT hopes the service will be back on-line within a matter of weeks. ▩

• AST: bringing 486 machines down in price

Bravo for the Tortilla chip

The cost of Intel 486 chip machines edges closer to a generally affordable level with the release of the Bravo 486-25 personal computer from AST which retails from just £2,495.

The high performance 25MHz 486-based machine has 2Mb RAM standard on the system board, expandable to 16Mb and integrated VGA graphics.

AST claims it has been able to produce the computer at such a low price because it has replaced 23 PAL chips and 19 other integrated circuits with a revolutionary ASIC (Application Specific Integrated Circuit) chip, known as the Tortilla chip.

Graham Paterson, Sales and Marketing Director of AST, reckons that the Bravo "sets a revolutionary new standard in desktop computing". He added: "It brings 486 performance in at a price every desktop business user can afford."

Some analysts predict that within a year 486 machines will cost the equivalent of today's reasonably priced 386 computers.

Next week *Express* will be revealing details of the next monster chip from Intel. ▩

EXCLUSIVE: new series plans to c

AMSTRAD SET FOR 1

Amstrad will launch a range of IBM compatible 16-bit games machines next year, *Express* can reveal.

The forthcoming line-up will be known as the PC4000 series, and will be presented with an entry level price of £399. Impeccable sources within Amstrad insist that the plans have been fully approved and that the machine will be launched next autumn.

The PC4000 will be Amstrad's most concerted effort yet to capture the top end of the home entertainment and productivity markets currently guarded by Commodore with its Amiga and Atari with the ST.

Details are thin on the ground at present, but we understand that the 4000 will be a single unit 286 PC with VGA graphics capabilities and a single 3.5-inch disk drive. A monitor will not be included in the entry-level price although attractive low-cost options will be available.

It will be styled in much the same fashion as the revamped CPC, launched earlier this year, and will be coloured industry cream.

In an extraordinary five years Amstrad has captured almost all sectors of the low cost market, from cheap games machines to keenly priced solutions for the corporate market. However, the middle ground has remained elusive.

Two years ago, in an attempt to lure buyers away from the ST and Amiga, Amstrad launched its PC200. However, an unimpressive technical specification coupled with a patchy marketing campaign led to the company's biggest disaster in the computer market.

But Amstrad feels that it has learned from the mistakes of the PC200.

Most importantly, the 4000, using an Intel 80286 chip, will be

What PCs are we buying?

Latest market share figures from leading analyst Romtec show distinct shifts in the buying habits and brand favouritism of professional buyers.

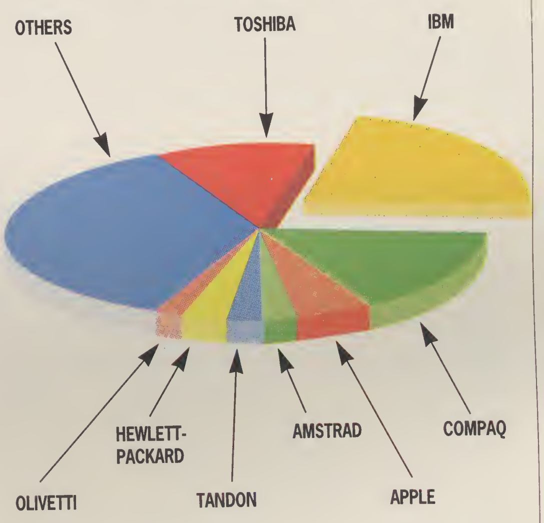
The UK PC market share by volume for August 1990 shows IBM in the lead with a 21 per cent slice – but that's down from 27.6 per cent in the corresponding month last year. Amstrad also suffered a drop from 12.3 per cent to 7.5 per cent. Commodore, which has been pitching for a slice of the PC pie for three years now, does not even feature.

Olivetti has managed to drag itself out of the anonymous 'Others' section with a 3.6 per cent share.

And Apple has gained ground rising from 6.6 per cent in August 1989 to 7.5 per cent. Its Macintosh is featured in the survey despite not being IBM compatible.

Other high-flyers include Toshiba, which rose from 5.3 per cent to 11.9 per cent, and Hewlett-Packard, which has carved out a 4.7 per cent share.

HOW IT BREAKS DOWN



Compaq retains second place with a 17.7 per cent share, up from 15.1 per cent.

The 'Others' section, which features a whole host of obscure Far Eastern clone manufacturers as well as more familiar names such as Atari, makes up 23.8 per cent of the market – up from 21.2 per cent. ▩

PS/2 mark 2

IBM has launched a portable machine in its PS/2 range of high-end business machines.

Costing in excess of £10,000, the machine has a disk capability of 400Mb and weighs in at a hefty 20lb.

The firm also announced in New York last week the latest additions to the PS/2 range, all of which are extremely expensive. Also launched was the new OS/2 version 1.3 program which runs at just under 2Mb of RAM and supports a windows environment. ▩

Strain standards

The US government is under pressure to legislate safety standards for people working with computers.

According to the US Bureau of Labour statistics Repetitive Strain Injury has accounted for nearly half of 1988 workplace illnesses.

Poorly designed office furniture, as well as screen glare and wrist and arm problems associated with user-unfriendly computer terminals, were said to be the problem. ▩

ns to capture home entertainment market

D GAMES PC 1991 LAUNCH

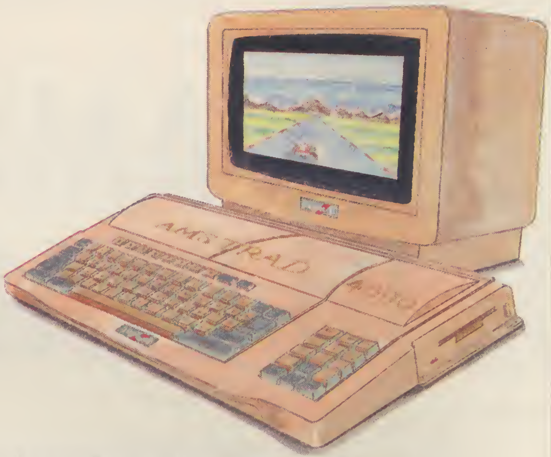
faster than both the Amiga and ST. And VGA colour is even better than the eye-catching graphics capabilities of the Amiga. The limited sound capabilities of PCs will cause problems for Amstrad and buyers alike, and it is doubtful if the Brentwood firm will make many improvements.

In the past two years games software houses have increasingly turned their attention to the PC market and although the more established games machines represent the lions share of their profits, PC games have proved more than worth the publishers' effort. There is also a steady stream of PC games coming over from the US, where the PC is regarded as a natural home entertainment machine.

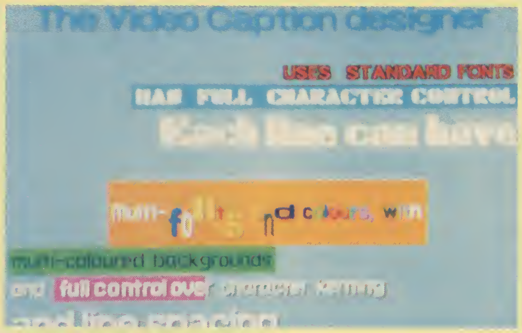
In its marketing campaign Amstrad will stress the PC's entertainment value as well as its educational and productivity advantages; an integrated business package is likely to be thrown into the original bundle.

But Amstrad, as always, isn't prepared to talk about forthcoming products.

However a spokesman offered: "I don't know anything about this and if I did I wouldn't be in a position to talk about it a year ahead of launch. I can't deny its existence, but then again I can't confirm it." ■



• *An artists impression: Amstrad's major launch for next year*


The Video Caption designer
USES STANDARD FONTS
HAS FULL CHARACTER CONTROL
Each line can have
multi-fonts and colours, with
multi-coloured backgrounds
and full control over character kerning
and line spacing

• *Video captions on the Amiga*

Amiga video presentations

Maze Technology has announced the availability of its *Video Caption Designer* for the Amiga.

It allows desktop video users to add their own graphics creations to captured video images. The firm says the software has been developed from state-of-the-art kit used in such TV programmes as *Network 7* and *The Chart Show*.

It features 50 screen transition effects such as 'pans', 'wipes' and 'reveals' which can be used to alter text or imported graphical images. There are also continuous 'roll' or crawl' facilities for moving images across the screen either vertically or horizontally. And it's all driven using simple point and click menu options.

***Video Caption Designer* costs £199, more information can be had on 081-556 5620. ■**

VP Planner OK for UK market

Paperback UK has responded swiftly to the recent out-of-court settlement in America between Lotus and Paperback US, concerning the similar 'look and feel' of their respective spreadsheets *1-2-3* and *VP Planner*.

Although Paperback in the US has agreed to stop selling its product in three weeks time, Paperback here is immune to the decision. The Chelmsford based firm is independent to the American company, and therefore is not connected with the long-running lawsuit.

It says it will continue to sell the popular spreadsheet over here and will be importing directly from the development company Stevenson Software, rather than Paperback US. Canadian coders Stevenson will be making improvements to the product, and plans to change some of the copycat keystrokes that irked Lotus.

Paperback UK's Alexandra Poel commented: "The developers feel that a slavish adherence to certain key sequences as a marketing palliative to support *1-2-3* has been a burden, when more intuitive and logical alternatives exist."

Paperback insists that, despite the similarities with *1-2-3*, its product offers more features. It will continue to be *1-2-3* compatible. Buyers should call 0245 265017. ■

• *Postman Pat: he delivers letters!*

Fun with telly-tots

Telly-tot favourites including Sooty, Thomas the Tank Engine and Huxley Pig are the stars of a new series of children's software from Alternative's educational label, *Friendly Learning*.

Thomas The Tank Engine's *Fun With Words* and Sooty And Sweep's *Fun With Numbers* are available now for the Spectrum, C64 and Amstrad at £9.99 for the cassette and £14.99 for the disk, a 16-bit version will be released next month.

Postman Pat's *Fun With Shapes And Sizes* should be available by the end of the year, and pencilled in for 1991 are similar titles based on Huxley Pig, Super Ted and Fireman Sam.

Each title contains six levels of learning and comes with a pack of flash cards which can either be used in conjunction with the program or on their own. Sooty and Postman Pat have already appeared in their own games, although the emphasis in the new titles is on fun and education.

"All the games are joystick led," says Alternative's boss Roger Hulley, "we didn't want them to be the type of software where the parents have to teach the child how to use the computer." ■

CPC console comes of age

The CPC console comes of age later this month with the release of the impressive high-tech platform game *Switchblade* from Gremlin.

The software company claims to have spent a lot of time and effort in porting the 16-bit game into the 8-bit console version. The game has high quality graphics and moves away from the scrolling nature of many console games.

James North-Hearne of Gremlin said: "We could not have been more happy with the product. It was a good 16-bit game and we thought it would make a great console game, but the problem was to keep it looking as good."

The CPC Plus console version of *Switchblade* will be available at the end of this month for £24.99. ■

Schools denied computers

Schools for children with learning difficulties are being denied "crucial" computers because they have to rely on private fundraising to buy them, reveals a survey by Her Majesty's Inspectorate.

The report on a survey of 200 special schools stresses the benefits computers have for pupils with severe physical and mental handicaps, as well as those with moderate learning difficulties.

But inadequate funding from local education authorities and central government means that the schools have to raise the money to buy the computers themselves. Inspectors concluded the report by demanding action to improve provisions for special schools. ■

Dole queue relief for ST owners

Unemployed ST users who who cannot afford to spend a fortune on games need despair no longer, because now there is a user group aimed especially at them.

STUNN! was founded by Plymouth-based user Dave Burns. For a £1 life membership fee, the cost of a blank disk and an SAE every month, members receive a monthly disk-based magazine with news, reviews, gossip and competitions.

The organisation is non-profit making so the magazine won't be bunged up with advertisements and the emphasis will be on fairness and value for money.

Aside from members, *STUNN!* is also looking for contributors. It doesn't pay for articles, but there's a 99.9 per cent chance of contributions being printed, and writers retain the copyright on their work.

If you're interested in joining you can write to Dave Burns at 10 Tilly Close, Staddiscombe, Plymouth, PL9 9DD. Oh, and you needn't send a UB40.

Low cost laptops

Sharp is launching a range of three low cost laptops starting at under £1,000.

All the models in the PC-4700 series are IBM compatible and use a 8088 compatible processor running at 10MHz with 640K RAM. With an eight by six inch white LCD screen and a battery life of four hours, each model weighs eight pounds.

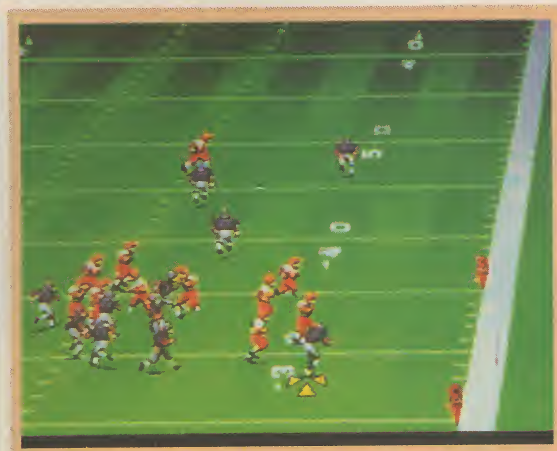
The three models are: the PC-4702 with dual 1.44Mb floppy disk drives at £995; the PC-4721 with 20Mb hard disk and 1.44 floppy disk drive at £1595 and the PC-4741 with 40Mb hard disk and 1.44 floppy disk drive at £1795. Contact Sharp on 061 832 6003.

Micros in the home

According to a Government report on British life published last week, 19 per cent of households have a home computer.

That compares with 13 per cent in 1985, when computers were first featured in the survey.

For the record, 47 per cent have microwaves, 60 per cent have video recorders and 12 per cent have dishwashers.



• *John Madden American Football : Mega Gridiron*

American football for the Megadrive

Electronic Arts is releasing the acclaimed *John Madden American Football* for the Sega Megadrive later this month.

The game was co-designed by Madden, one of the NFL's most successful coaches and best known in Europe for his Superbowl commentaries.

Among its impressive features are teams with players who each have individual strength, speed and intelligence rankings, varying weather conditions, refs who spot the ball and call penalties and fans that support their favourite teams.

Players can choose one of 17 teams – which include the All-Madden All-Stars – to play for or against in the regular season, or select one team and enter the playoffs.

John Madden American Football will retail at £39.99.

Your chance to trade-in old machines for the new 1500

CBM EYES AMIGA TRADE IN DEAL

By Colin Campbell

Commodore is contemplating offering Amiga 500 owners the chance to upgrade to its new Amiga 1500 Personal Home Computer package.

If the scheme is approved, Amiga owners will be able to trade-in their old machines and, for a still undecided price, move up to the more powerful and highly expandable 1500PHC.

Upgraders will be offered a 1Mb machine with two disk drives in an Amiga 2000 case. This offers options for extra graphics cards, processors, or a PC bridgeboard.

The PHC is seen as an 'adult' home computer, and Commodore is keen to shift established A500 owners up to this new stratum. The firm is displeased with the amount of money being made by third party add-ons manufacturers.

However, the decision is being held back until a firm pricing and organisational policy has been fixed. A spokesman for Commodore said that such a scheme was under discussion, but he could not reveal details.

• *Amiga 1500: upgrade deal on the horizon*

The 1500 pack costs £1,000 and comes with a colour monitor as well as integrated business package Amiga Works (this features a word processor, database, spreadsheet, printing tool and comms).

There are also a number of 1Mb games including fully fledged versions of *Populous*, *Sim City* and *Their Finest Hour* and expansion disks for the first two. *Amiga Format* magazine's popular user guide *Get the Most Out Of Your Amiga* is also included in the 1500 deal.

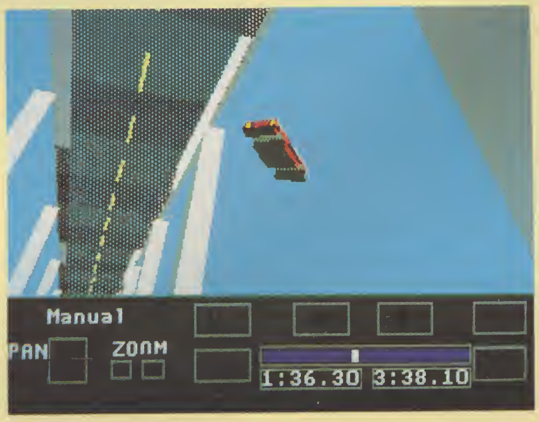
Extra dimension to race

***4D Sports Driving* is the first release in a series from Mindscape designed to give sport an extra dimension.**

The titles all utilise a new Canadian graphics technique for producing fast polygon vector graphics in highly impressive detail. Mindscape reckons *4D Sports Racing* features the most amazing tracks you have ever seen, with 360 degree loops, hair-raising jumps and other nerve-racking stunts.

Special features include a 4D sports video camera which lets you watch the action from any conceivable angle, and there's an editor which allows players to create their own tracks.

4D Sports Driver is available this month for the PC at £29.99. Amiga and ST will be released in January. The next sport due for a 4D overhaul is boxing.



• **4D Sports Driver:** ***long drop.***

Importers move quickly for games console launch

ENGINE HAND-HELD UK ARRIVAL SOON

The PC Engine hand-held games machine will be arriving in the UK late this year, albeit through unofficial sources.

NEC's low cost colour hand-held will be launched in the US at the end of this month with a price tag of $250 (£130). Importers are likely to move quickly in order to catch the Christmas market.

Called the TurboExpress (see Issue 84) it has the novel distinction of being 100 per cent compatible with its full-sized sister, and a solid games base has already been established by grey importers in the UK.

The machine, which was first shown at the Chicago Consumer Electronics Show last June, features a 2.6-inch screen boasting 512 colours. Sources inside NEC claim the machine is four times faster than the mono Nintendo Gameboy. And like Atari's Lynx, it boasts stereo sound but only six channel music (as opposed to eight).

Peripheral launches are expected early next year with a TV tuner likely to weigh in at about £50. A car cigarette lighter adapter and rechargable battery pack are also planned.

David Lunsden at mail order firm Console Quest said: "We're definitely going to be bringing these into the country. I have a meeting with my contacts later this week, and I'll be deciding prices and such then. But we've already got firm orders from people eager to get their hands on the machine."

Nevertheless, the emergence of the TurboExpress will worry neither Atari nor Nintendo in the UK. Both have initiated expensive and impressive advertising campaigns with the Atari Lynx aimed squarely at the schoolboy market and the Gameboy, perhaps surprisingly, being pitched at a slightly more sophisticated user.

• Turbo Express: UK awaits.

• Train of thought: Atari's railway success.

ST makes tracks

Atari was in bullish mood last week following its 'whistle stop tour' of seven British railway stations.

The firm had filled up railway carriages with all manner of hardware ranging from a barrage of Lynx hand-helds to professional TT machines.

Some 20,000 people turned up making it the most successful promotion of its kind since BR began the scheme. An Atari spokesman commented: "We were averaging about 2,500 people every day, BR's previous record was only about 870. Unfortunately we won't be able to do the same next year because BR have decided to cancel the machine. But we are looking at another roadshow, perhaps at regional fairs."

Another Atari Show is planned in London next year, and the firm has not ruled out the possibility of an appearance at next year's Computer Entertainment Show.

Visitors to Atari's tour seemed to be happy, with games being the most popular attraction.

Clive Parker of Pill near Bristol turned up at Temple Meads station and concluded: "A bigger train would have been better but I enjoyed playing with the Lynx."

Mike Durkin, who travelled from Southampton to Bristol said: "It was very hot and I was disappointed not to see more on the business side. But my son enjoyed the games."

Peeper-proof program for PCs

If privacy of information is high up on your computing agenda, a new software package from WSA may be of assistance.

Sentry **enables users to clear their display in an instant, without having to save or exit an application if you leave your desk for a few minutes. The main program continues to run without being affected, but the screen simply shows a no-entry sign. Your real display will return on the entry of a password.**

Other facilities ***Sentry*** **offers include the ability to disable your keyboard and screen thus keeping snoopers at bay.**

Sentry **is available now from WSA with a £125 price tag. Phone 0992 553341 for further details.**

SHARPER SCREENS

You can share the work
throughout your office using
a Local Area Network.
Press any key to continue

• Buyers of Opus PC kit are being offered an upgraded VGA monitor with their new machine – at no extra cost. Previously, the PCs were sold with inferior .36-inch dot pitch models, but that has been improved to the clearer .28-inch dot pitch. The PCIV has already been upgraded from 12MHz to a much nippier 16MHz. Again, there's no extra charge.

Shortages here we go again

You've heard the hype, you've seen the ads, you've even saved the money. Now it's time to go out and buy that lovely new computer.

There's only one snag. The hardware manufacturers, distributors and dealers haven't managed to get their fingers out, there's a shortage of available kit, and you're left scouring the Yellow Pages in search of a machine.

Come the peak buying season there are always shortages of some pieces of hardware. It looks like it'll be the C64 console and Amiga this year.

Commodore was last week wailing to the trade press that "demand has shot up" so much that there's not enough to go around. Retail sales manager Kelly Sumner said: "We want to alert people to these shortages and apologise for them now."

Cynics suggest that these complaints are manufactured in order to create pre-Christmas demand by dealers and buyers. While this is by no means a far-fetched theory, distributors and hardware manufacturers do spend time and effort getting hardware into the country.

Last year Atari was in a state of total panic when a bunch of STs were held up because of a dock strike at Felixstowe.

Atari reckons it has actually managed to organise itself this year to such an extent that no-one need go without. Spokesman Peter Walker said: "We have a full stock situation right up until the end of the year. We've got extra staff in and extra shift workers. This year we've got it right, not even a dock strike will stop us."

Packaging goes pop

For packaging you can eat, order a computer from Dutch company Corblan where popcorn has replaced polystyrene.

The company reckons that popcorn is the ideal shock absorber as well as being environmentally friendly.

It has hired an expert to develop a long life blend to avoid the stuff ponging on long hauls but prefers to use fresh popcorn to keep customers happy.

The resulting 40 per cent rise in packaging costs is a "small price to pay for the environment," says the company.

THE WEEK IN VIEW

Is hacking a major problem to security systems? Rob Scott and Edward Singh tell the hackers' side of the story.

Your money's safe with the Woolwich. So the old advertisement used to say. But is it? A resounding "Yes" emanates from the boardrooms of the national banks. But among this positive (albeit false) euphoria, there is a quieter, generally unheard voice of dissent.This small group of people, hackers, as you or I know them, are responsible for the hair loss of thousands of bank executives worldwide.

British banks are reasonably secure – most employ complicated encryption software that needs a 16-digit code in order for the data to be of any use to anyone.

The majority of frauds involving this type of system are co-perpetrated with the help of disgruntled employees, who for their part want nothing more than to see a few fat executives at head office squirm.

Another often used fraud technique is called 'The Salami'. This involves extracting a small amount (usually a penny) off each transaction that the computer handles and adding the proceeds to your own account. In an average week you could net around £1,200.

In this and other similar ways, banks and other financial institutions lose hundreds of thousands of pounds a day. Even so, this amount is a drop in the ocean. Banks always have a reserve pool of money specifically to write-off debts incurred by dishonest hackers; the loss is considered as another fact of life.

Hackers tend to be blamed for all these and other security mishaps. However, for the hundreds of unscrupulous hackers in Europe, there are thousands more like Edward Singh that do it merely for the fun of looking at somebody else's system; viz 'The Ritz video chain hack'. This was done to prove a point. All you needed was a little knowledge about the Unix O/S A 300 baud modem, a cheap computer (CPC 6128) and any one of 800 Ritz video shop telephone numbers.

Armed with these, we proved that it was possible to create false accounts and take video cassettes out on those accounts. To perfect the fraud all that had to be done was to ring the computer up and return the video cassette to stock.

When we contacted Ritz head office we were told by a senior auditor (who clearly knew very little about the computer terminals) that the systems were secure. The company responsible for the security of these systems was telling Ritz that its systems were secure and Ritz was paying them for this supposed security.

Hacking is not the major problem the media makes it out to be, however much the victims say the contrary. The problem is sheer ignorance. Solve that problem and you are more than half way there to securing a computer system.

Employers should never operate on a 'need to know basis', but more on a 'why you need to know' basis. The fewer people who know intimate details about the system, the less risk to the system by the aforementioned disgruntled employees.

As long as there are computers, there will be hackers. Sooner or later you will have to put a price on the protection of your data. If it's later, then you may no longer have any data to protect. ■

Express Access

Hey! Get in touch with us! *Express* is always on the look out for news leads and tip-offs – and we'll pay you for passing them on too!

Also, if you have any burning ideas for features or surveys then drop us a line – remember, we cover every aspect of computing.

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EDITOR • Andy Storer
DEPUTY EDITOR • Stuart Anderton
NEWS EDITOR • Colin Campbell
ART EDITOR • Amanda Cook
TECHNICAL EDITOR • Keith Pomfret
STAFF WRITER • Tim Smith
PRODUCTION EDITOR • Julie Tolley
SUB-EDITOR • Steve Coulter
NEWS ASSISTANT • Dave Golder
CONTRIBUTORS:
Steve Carey • Robin Alway • Jason Holborn • Rod Lawton • Hadyn Fitz-Williams • Mark Higham • Adam Waring Richard Frederick • Sean Masterson Ken Coumarin • Steve Gold • Steve Patient • Mary Branscombe
ASSISTANT PUBLISHER • Jane Richardson
CIRCULATION DIRECTOR • Sue Hartley
ADVERTISEMENT MANAGER • Helen Kirkhope
AD EXECUTIVES:
Phil Davenport • Tim Partridge • Cheryl Beesley • Jason Spice
AD PRODUCTION • Tracy O'Donnell
AD TYPESETTING • Terry Turner

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COMING NEXT THURSDAY

Sound advice?
How can you get reliable advice on buying a computer? We test out some common sources

By any other name
Is it worth paying extra for a machine with a well-known brand name?

Using Unix
Part two of our Unix feature looks at the versions available for your machine

PLUS

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- Columns for: Amiga, Arc, CPC, C64, Macintosh,PC, Spectrum and ST

AND

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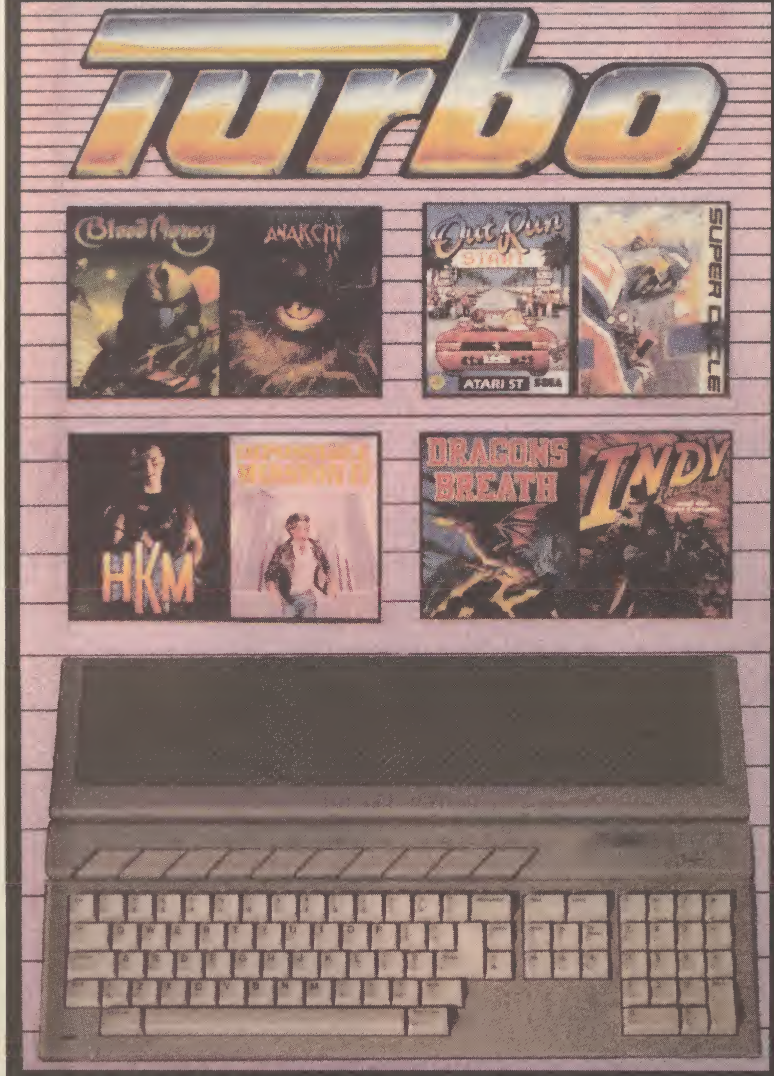
AT YOUR NEWSAGENT ON THE 14th

ATARI ST

"E" & "FM"



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EXPRESS MAIL

Haydn"s firmly back on the case - so get writing if you fancy your chances of winning one of his fivers.

Write and tell HFW what you think about anything under the Sun! Reach him at: *Express Mail, 30 Monmouth Street, Bath BA1 2BW.* Sorry, no personal replies, even with an SAE, as we're too busy writing the magazine.

TV Critic

Hyperland, the Multimedia programme on BBC1 the other week may well have been full of rather tedious speakers, but it was, nevertheless, a good attempt at showing what a multimedia TV system would look like. Well, I think so anyway.

I can in a way understand why Martin Stephens disliked the programme. The whole concept of interactive multimedia is that you can search the system for a subject that interests you, and the computer being clever, will provide you with loads of cross-referenced icons representing related subjects. If by any chance a boring fit turns up and starts waffling on about something you couldn't care a *Doctor Who* about, you just close his window and look at something more interesting.

One final point: the BBC and ITV are completely useless at making computer related TV programmes. When *Micro Live* was released they thought to themselves 'That's a good program with loads of viewers. Yes. lets scrap it'. I know everyone said it was biased towards the BBC (I had a BBC then and still do: along with a PC) but it was a fundamentally good programme....

Can I have a fiver please Haydn?

Tim Gowen, Norfolk

No. But I agree with you about TV shows – in a former life I was involved with a TV show, which was the first TV show to review computer games. Apart from a planned Channel 4 series that puts computer gaming up as a competitive sport, the powers that be in TV-land have ignored our hobby for years.

Yet we have to put up with twaddle like organic gardening shows... Pah!

H F-W

Ten MSX things

Please find below a list of ten things that not many people know about MSX – you are not likely to find them very amusing but I'm sure most other MSXers will.

1) MSX was launched in the UK with more software titles than the ST had at its launch.

2) MSX was the most complete implementation of beginner's all purpose instruction code (remember what BASIC stands for) available in 1983 – or for some time afterwards.

3) MSX machines are still being made in Europe (by Philips) as well as in Japan.

4) For Commodore and Atari 8-bit owners – you can change both the foreground and background colours from BASIC.

5) For Electron and Speccy owners – you don't have to buy a special interface to plug in a printer or a joystick.

6) The very few cases of incompatibility between MSX machines are well known – they won't come as a nasty shock to you – one for Speccy owners.

7) Some British software houses are still producing MSX software; some retailers are still selling hardware and software and some MSX textbooks were reprinted last year.

8) The first Compact Disc with computer programs on it was made for MSX.

9) In 1988 an advertiser of IBM compatibles described the AY3 8910 sound chip as 'brilliant' – one for MSXers.

10) On page 3, Issue 101 of *New Computer Express* an MSX3 was announced; on page 13 of the same issue HFW hinted (again) that MSX owners wouldn't find anything about our format in *NCE.*

HTW Childs, Welling, Kent

Oh no I didn't. I've been saying that we will continue to cover the 'minority' machines, even though we've dropped the little columns we used to give over to them.

Anyone care to hazard their 'Ten Things' list for another machine – the Tatung Einstein, perhaps, or the Commodore Pet? I'm sending Mr Childs one of my famous fivers, so that works out at 50p a thing...

H F-W

Watching TV...

Nick Booth (issue 102) opens up a can of worms of galactic proportions. I am referring, of course, to the hideous pan-media phenomena of feeding it into the computer.

I frequently balk at the ease with which our televisual counterparts perform computational miracles. My personal favourite is Doc's statistical analysis of the possibility of becoming a spook-alien in John Carpenter's *The Thing* – a medical man and software genius to boot! I sincerely hope your readers can bring some more to our attention – *Star Trek* is a good place to look.

Ashley Gwyn Jones, Cricklewood, London

No sooner said that done... my next correspondent has already found something on the tube that he wants to share with us...

H F-W

Soapy Amiga

Hands up all those who spotted Paul in *Neighbours* having an Amiga A500 installed in his office during Friday's episode on 10 October (ST owners need only lift a finger and bow their head)!

The Amiga featured in two sequences: the first was an excited Paul watching over someone while they put the machine together and the second involved general acknowledgement to the 'very nice' machine by Gail, Paul's TV wife. A subsequent episode also showed it as a background office prop running business software (all you ST owners please note)! And another scene had Jane typing away on it like she knew what she was doing! But why has the Amiga been brought into the program in the first place?

I guess that their disks will become infected with a virus and it will spread to all the residents of Ramsay Street – killing them off one by one; or Dr Robinson (who appears to suffer perpetual read/write errors with her script) performs open-heart surgery on an infected disk and catches the dreaded 'boot-block-pox' from it! I suppose the doc will have quite a shock to see the message 'something wonderful has happened.... your Amiga is alive' because it'll be the first time the poor woman's managed not to kill off one of her patients!

By the way, I've got a great tip for Keith Pomfret: please remove your photo from the Tech Tips page – there will be room for another four agony letters in the space taken up by those chins! (Only kidding Keith...)

D Walton, King's Lynn, Norfolk

I take it from the tone of your missive that you are an Amiga owner. Have a fiver for being so sharp-sighted.

Who knows? Perhaps we'll soon be seeing an Oric in *Prisoner Cell Block H*, Arthur Daley with a lock-up-full of ZX81s or David Attenborough examining the mating habits of QL owners during Prime Time TeeVee.

And as for Keith, here's a picture I took of him when we were in Moscow the other week, about two hours after he had done a bit of Glasnost Tech Tipping (as he explained in issue 104.

• Keith Pomfret – 'on location'!

As you can see, he does not look the slightest bit like Ken Garroch, as one of his correspondents stated.

The silly fellow forgot to bring his computer when we went to Red Square, but I'll pay a fiver for the most interesting 'on location' shot of a reader with a computer. Send 'em in!

H F-W

SIMMian antics

Further to the 'waste of SIMMs con' debate in the last few issues; I note from a review in a rival journal that IBM clones are not the only machines to feature architecture that requires the replacement (and discard) of 256K SIMMs when upgrading to more RAM. The Apple Macintosh range, both the hideously expensive old models and the merely expensive new ones just announced, are also beset with 'disposable SIMM' upgrade paths.

As for the idea that dealers should take old 256K SIMMs in part-exchange when selling you new 1Mb ones, the question of who is to pay for this policy arises. Neither the dealer nor the manufacturer can afford to buy SIMMs just to throw them away, except by putting up prices to the consumer. Or perhaps you are willing for them to sell you a brand new computer with someone else's second-hand memory in it?

Certainly, computers could be designed so that no SIMM need ever be discarded when upgrading. All you would need is four times as many SIMM sockets and maybe some extra memory management chips. That makes the board bigger, so the case would also have to be bigger. Of course, all that costs money, and it costs up front, whether you ever actually upgrade or not. People who never upgrade might regard this as a waste.

Iolo Davidson, Tetbury, Gloucestershire

Well, there we have it. The end to the SIMM debate, unless anyone else has something to add. Thank you Bill Poel and Iolo.

H F-W

Into the datasphere

The flavour of the month at the moment seems to be cybertech and virtual reality devices, so I thought I would share with you a quick vision of the future.

Arrive home from work. First, supper. Take a frozen meal out of the freezer, run the bar code reader across and pop it in the microwave which already has all the settings from the barcode. While it cooks, another meal is ordered from the supermarket by the kitchen computer.

After supper I'll just relax for a little while – 15 minutes on the brainwave synchroniser should do the trick. Quarter of an hour later...'That's better, just check tomorrow's diary'; plug it into the main computer which updates any new appointments and erases old entries ensuring optimum memory usage at all times. The financial organiser tells me that I can afford two hours of 'interactive on-line time' (nobody says TV any more). I suit up and flick the switch.

Suddenly a 3D scene lights up before me. I choose tonight's catalogue and see what's on. Hmm, there is a Grand Prix – I'll have a go at that. Choices: car make, it'll have to be a Ferrari; team mate, jump in Nigel; track, make it Silverstone. Now to qualify, climb into an easy chair at home but all I see is a F1 car surrounding me. Off I go. A few laps later... Not again! I keep on crashing at that corner – I know, I'll move to the track editor and smooth it out.

Start time. The track fills up with other cars. Hey! I recognise that call sign, that's the bloke (or is it a woman?) that beat me at last night's karate competition. Finally.... the timer's telling me my time's up, I can't afford any more time.

Well second wasn't bad, not after the seven crashes. I think I'll just read a book now. Log onto the on-line library and download the latest bestseller to my portable 'book' – just a battery-powered LCD screen with memory.

Time for bed now. Switch on the sleep inducer, and a series of flashing lights and sounds lulls me to sleep.

Some of this may seem a little far-fetched, but how long ago was it that we didn't have TV? When will using the on-line library become as common as using directory enquiries, or as expensive?

Must go now I have a grudge dogfight to play, now will I use the F14, F19, or F29?

Mathew Millar, Clifton, York

Yup. Your vision of the future contains about the only hardware I'd sell my Mac IIfx for. And I might just throw in the diesel Fiat Uno for that sleep inducer.

H F-W

Student ploy

Unbelievable! Your issue 100 has been framed and plastered to my bedroom wall. Alas, that was my last *NCE* for quite some time. Having read the NeXT review I have come to the conclusion – hard up student that I am (quick Hello to my friends at Bradford College) – that this is the only machine which will adorn my desk after I sell my current PC.

As well as studying I have taken up two part-time jobs, have turned off the electricity, eat cold meals, and think nothing to cold showers every day. Amazing as it may seem I have also had to stop frequenting public houses and now read my favourite computer journal standing up at the newsagents!

I must have this machine. All donations would be greatly appreciated. The bank refuses to lend me five grand.

Raj Singh, Bradford, West Yorkshire

Can't say I blame them. Why don't you get some good exam results and then take up a job that pays such a good salary that you can afford a NeXT every month? Still, I'll send you a fiver towards your fighting fund. Only another 4,999 letters to me to go, eh?

H F-W

Son of SAM?

Just read your mailbag from issue 101. You said there is no chance of a mainstream Coupé magazine.

It's the Coupé magazine, you find it on the top shelf (just like yours). It's got a centrefold (just like yours). It has probably got a debate saying their thing is bigger and more powerful than others (just like yours). Its mainly read my men (just like yours).

The only difference is it is a German magazine (I saw the advert on a German station on Astra). The big difference is it's not computer related, but similar in style to *Penthouse* (Mary Whitehouse would have jumped out of her skin if she saw the advert).

Clifford Cooper, Brighton, East Sussex

Now you know perfectly well that's not what I meant by a Coupé magazine, don't you Clifford? H F-W

Another SAM fan

Okay so *Pop Computing* has gone, and you think you've got that readership in the bag, yeh? Not on your life, me old china, think again. People buy a magazine for all sorts of reasons, as the aforementioned SAM user illustrates, not because its the only one around. Your attitude toward the SAM (small beer computers) says it all. Can you imagine how hard and frustrating it is to design, build and market a product such as a computer? Obviously not.

That MGT failed as a company was bad enough news, but that doesn't mean that the product was bad. The new SAM Computers Co. is going to succeed on the strength of having learned from past mistakes and because the product that they produce is a good one. Since the price reduction (£199 inc.VAT) and the decision to sell it with a 1Mb disk drive as standard, sales are going well and this Christmas will be the success that last year eluded the company.

You will then eat your words and reinstate the SAM column, of that I'm sure. Better do it now and save face. Having said that, the chances of this letter being published are about as narrow as your point of view. But never mind, you can't win 'em all.

Malcolm Phillips, Swansea

I'm not one to bow down to threats, Malcolm. If your prediction is right, I'll send you not one, not two, but three tenners on 30 January 1991. Now let's see. Last year the Amiga sold around 140,000 units over Christmas, so if the Coupé shifts 70,000 units this Chrimbo, I send you your money and ask the publisher for a regular half-page Coupé column. If it doesn't, you can send me a fiver. Deal?

Oh, and talking of deals – if Dave Burns, the Group Scout Leader of the 1st Wembury Scout Group happens to be reading, where's my woggle? Far be it for me to remind you, Dave, of the PPS to your letter printed in Issue 102 and of the First Scout Law: 'A Scout is to be trusted.'

H F-W

Geriatric?

Thanks a lot for a much better *Express*, but why is it still called *NEW Computer Express*? Surely by now it has earned the title: '*Middle-aged Computer Express*'?

Peter Galey, Leeds, Yorkshire

The only thing anywhere near middle-aged in the *Express* office is the Mac Plus that Keith Pomfret uses to type his Tech Tips. According to your logic, New York ought to be renamed 'Old York', *New Faces* should be called 'Old Faces' and *Beadle's About* should be called 'Beadle's Been Around' (which to my mind, he has. For far too long.)

H F-W

MAIL SHORTS

Renegade Action

In reply to John Miles' letter – Renegade don't particularly wish to make 'programmers into superstars'. All we want to do is give programmers credit and recognition for their work, and a fair deal cash-wise. When a programmer has to wait 18 months for royalty payments the result is not only a dissatisfied team of programmers, but poorer quality games! We're offering 50/50 deals and payments within three months.

Adele Nosedaw, Renegade

Bug Free Plea

I agree with Stephen Ward in Issue 102 about bugs in games – your reply said that you paid £800 for a program and expected quality and we only paid £25. It seems you are saying that you shouldn't complain if you've only paid £25.

Well, £25 is expensive – and some games are so obviously bugged they shouldn't be released. All games should work, no matter what the price.

Paul Heighton, Cramlington

So they should. I was just trying to get across the scale of things... You can't realistically expect perfection from everything you buy. H F-W

Show Off II

My family and I can beat R Morgen's collection of computers. We have two Apricots, two STs, a BBC and a Vic 20. We also used to have another ST and an Electron.

Andrew Cliffe, Mulbarton, Norwich

But you didn't send me a picture, so unlike Mr Toomey in last issue, you don't win any tenners. Remember, I'm looking for pictures as well as words all you fiver-hounds out there! H F-W

Accrington Stanley I

An 'Accrington Stanley' response is an accurate way of describing the unhelpful and senseless error messages that would drive a vegan to the milk bottle.

KFC, Tyne and Wear

Accrington Stanley II

The response is from an advert for milk – the one with the two young boys coming in from a football game. The Accrington Stanley response means the computer doesn't know who (or what) Mr West means.

Ashley Price, Lewes, East Sussex

ALL ABOUT . . .

For many people, Unix represents the future of computing. Mike Hardaker takes a look at the history and key features of the 'standard' operating system.

To understand why Unix is the way it is, it is necessary to understand a bit about the history of computing. Back in the days of the first electronic computers, shortly after the last war, all computers were essentially 'personal' computers. Just as with most of today's business PCs and home micros, only one person could use a system at a time. The system, in turn, could only perform one task at a time and there wasn't even a way of automating things to let it stack up commands. The operator entered an instruction, the computer processed it, delivered a response and then waited for another instruction. If you have a pocket calculator you will know how useful this sort of system can be, but also how limiting.

By the end of the 1950s, 'batch' processing had become standard. Programmers coded their instructions on to punched cards and a whole stack of these cards could be fed into the machine at once. The computer then worked through the instructions on the cards, one by one and delivered (probably some hours later, in the form of a printout) a response. The system was still strictly single-user, but the batch process did allow several people to work 'off-line' at the same time. The cards they had prepared would then be collated and fed into the computer.

The next stage was to provide some way of several people having interactive use of the computer at the same time. This necessarily requires the computer's central processor to divide its time between several concurrent processes. The approach is consequently known as 'time-sharing'.

The first true time-sharing systems were developed in the 1960s. One of the best-known is the IBM System/360 mainframe family, still with us today in the highly-modified form of the System/390. Another was developed jointly be the Massachussets Institute of Technology, General Electric and AT&T's Bell Labs, and called MULTICS (MULTiplexed Information and Computing Service). The project was to lead to the most ambitious operating system design of the time. Unfortunately, the concomitant complexity led to MULTICS being viciously hard for programmers to use as an applications development platform.

MULTICS was eventually completed by the MIT and Honeywell (which had bought out GE's computing interest) and was used on Honeywell mainframes for over 20 years. AT&T had dropped out of the project at a fairly early stage, but one Bell Labs researcher, Ken Thompson, was still interested in operating system design.

SMALL IS BEAUTIFUL

Using an old DEC PDP-7 minicomputer, Thompson wrote a stripped-down version of MULTICS. It was just a single-user system at the time, so Brian Kernighan, another Bell Labs researcher, called it UNICS (UNiplexed Information and Computing Service). The fact that it was a 'eunuchised' version of MULTICS made this seem particularly appropriate. Despite the single-user nature of UNICS, it contained many of the features which Thompson believed a multi-user operating system should contain – specifically, it followed the ethos that small was beautiful, going for a pared-down approach which made life easier for applications developers, rather than harder.

Bell Labs thought this prototype was pretty impressive and came up with the money for a more modern DEC, a PDP-11, for Thompson to use as his test-bed. Since the original UNICS was written in machine-specific PDP-7 assembly language, it had to be rewritten for the new system. Dreading the tedium involved in doing this again and again as the underlying hardware technologies for his operating system changed, Thompson decided it would be better to write the thing in a high-level language. Then, only a different compiler for that language would be needed on each different computer, with the source code for the operating system just being recompiled. The fact that there wasn't actually a suitable high-level language for such a project was no deterrent – Thompson wrote one, called B. Dennis Ritchie redesigned this, producing C (so called because it came after B) and then the two of them rewrote Unix (as it was now known) in the new language. This was in 1969.

In 1974, Thompson and Ritchie published a paper which described Unix and its underlying philosophy. It was immediately popular in university Computer Studies departments, as its simplicity of structure made it ideal for teaching the principles behind operating system design. As AT&T happily distributed the Unix source code to the universities, students could even see (in a reasonably comprehensible high-level language) how the two Bell Labs researchers had gone about coding an operating system.

The close relationship between Unix and C was also a key reason for the operating system's success in the academic environment. Unix is the ideal environment for C programmers, while C itself (being a sort of half-way house between assembly language and conventional high-level languages) is ideal as an educational tool, taking students interestingly close to the computer hardware.

BIGGER IS 'BETTER'

One of the side-effects of AT&T's decision to distribute the source code of Unix was that people began to adapt it – a standard university exercise would be to re-write a module of Unix, for example, or to add some feature which wasn't originally present. This meant that it was less and less true to describe Unix as a having a single standard – each individual copy of the operating system could well have been modified and then re-compiled. From Version 7 (usually known as V7), AT&T stopped distributing the source code with Unix, in an attempt to bring the system back into the fold. V7 was larger than the original Unix, as it included many of the more popular 'extra' features which had then been written.

'Rogue' Unices (as the plural is spelt) continued to emerge, however. The University of California at Berkeley acquired the rights to port V7 to the DEC VAX range of minicomputers. In the process of doing so it added a whole host of extra features, including support for virtual memory (allowing larger programs to be run). The Berkeley Systems Distribution (BSD) version of Unix is now one of the most popular around. Meanwhile, AT&T re-wrote V7, producing System V. BSD and System V are now almost one product again, thanks to the POSIX standard.

POSIX is not the only 'standard' standard now, however. The large computer manufacturers – aware that Unix presented a potentially lucrative market – also muscled in on the show. The result was the Open Software Foundation, which has produced a rival set of definitions for integrating the various versions of Unix. For there are now many of these: Xenix is the Microsoft-developed adaptation for PCs (now under the control of the Santa Cruz Operation); AIX is IBM's own Unix, capable of running on most of the company's machines, but mostly seen on PS/2s and the RS/6000 workstations; there's the XOPEN organisation, SunOS, Steve Jobs' variant for the NeXT... the list is endless.

ALL THE COLOURS OF THE RAINBOW

Although originally designed as a mult-user operating system, Unix is increasingly used on single-user workstations. The ready portability of the main elements of Unix has made it a favourite for systems based on RISC (Reduced Instruction Set Computer) chips. Each RISC chip has a different instruction set, but if Unix is used, a new compiler is all that must be written for each new hardware development. The base operating system (and the all-important applications) can be ported easily.

RISC workstations tend to be used for performing highly computer-intensive tasks (which is where, after all, the RISC chip scores). As these are increasingly those applications which require the manipulation of complex graphics, raw Unix is not very suitable – its user interface is firmly rooted in the text-based green screens of the 1970s. Consequently, a number of graphical user interfaces (GUIs) for Unix have appeared. These serve two purposes: they make basic program and file manipulation easier (basic Unix being positively user-hostile) and they provide the infrastructure for graphical applications – just as Windows, for example, does on DOS-based PCs.

Unfortunately, no single standard has emerged for these GUIs. The nearest there is to a standard is XWindows, but this is not really a GUI, more a collection of specifications for windowing – each different supplier tends to have a different XWindows-based front end. The most common GUI today is OSF/Motif, but NeXTStep is gaining in popularity, not least because it is available on the IBM workstations. Other GUIs include DECWindows, and Open Look.

INSIDE UNIX

The heart of Unix is the kernel. This is the basic part of the operating system, which passes information to and from the computer's processor. It is identical in concept to IO.SYS and DOS.SYS, the two hidden files which provide the kernel functions of MS-DOS.

The equivalent of MS-DOS's command interpreter COMMAND.COM is known in Unix as the shell. It is the shell with which the users interact, the 'buffer zone' which translates human commands into instructions understandable by the kernel, as well as handling the time-sharing on multi-user systems. Just as it is possible to replace the PC's COMMAND.COM with a different command interpreter (done by such programs as 4DOS), Unix can have a number of different shells. Systems based on AT&T's System V have the 'Bourne' shell as standard (named after its creator, Steven Bourne) while Berkeley comes with the C Shell. The third most common shell is the Korn shell, also named after its writer. The three are fundamentally similar in operation.

The next stage up contains the files. As with MS-DOS, these are arranged in tree-structured directories. Unix differs from most operating systems, however, in the way it uses its files.

Key to the initial design of Unix and the reason for much of its flexibility, its the concept of device-independent I/O (input-output). What this means, in simple terms, is that data moves in and out of the shell in a standard way, no matter where it has come from. To Unix, disk drives, printers, modems, keyboards and displays are all seen as files. Whether you are entering data at a keyboard or reading a file from disk, Unix sees it all the same way. This makes it very easy for Unix (and its applications) to keep up with developments in the hardware world. If a new printer or a new design of terminal is produced, the kernel does not need to be re-written. All that needs doing is to write another 'device driver' file. Unix will direct its output to the device driver or receive its input from it, and the device driver will perform the translation into the hardware-specific codes.

Files can also be more conventional in nature, holding data or programs. A large number of utility programs are bundled with Unix (just as with most modern operating systems) including programs for listing files and directories, formatting text, editing and so on. Normally, a C compiler is part of the base operating system too – since the different Unices are source-code compatible at best (in most cases) it is usually necessary to recompile a program when porting it from one system to another.

UNIX NOW

Unix now tends to be used in three distinct areas. The first of these is the academic world: Unix is still the universities' choice. The second is Unix's traditional heartland for business work, at the heart of a low-cost multi-user system, for example handling an accounting department. Finally, Unix is being used more and more on high-power workstations, performing everything from finite element analysis calculations in university departments to computer-aided design in business.

Unix has seen a great increase in its popularity in recent years. The development of the XWindows based GUIs, together with a number of relatively easy-to-use shells has enabled it to move into the end-user markets its extreme austerity had previously intimidated. However, it has grown. A typical PC-based AT&T System V configuration requires around 7Mb of RAM, a 386 processor and a hard disk of well over 100Mb. When you take into account that the operating system itself can easily cost another £1,000, it is not all that surprising that Unix has yet to dominate the mass-market.

Nevertheless, its flexibility and portability still makes it a programmer's favourite, and it is possible that it may well be the dominant operating system of the future as hardware (and Unix) prices drop. Whether it will be recognisable as Unix, or completely smothered under high-level user and programming interfaces is another matter altogether. ■

● *Next week we review two sub-£100 versions of Unix for the PC, ST and Amiga.*

THE BAD POINTS

The fact that Unix is ideal for programmers does not necessarily make it ideal for users. Indeed, in its native form, Unix is about as user-friendly as an orang-utan with a machine gun. Like the C programming language in which it is written, it is possible to do something legitimate in Unix which will actually crash the system.

Although much of Unix is standard, the differences between systems mean some tailoring is often required to move a program from one Unix to another. For the non-programmer, 'some' is too much. Also, although a large number of applications are available for Unix, the majority of these started off as bespoke programs written for a single client. They tend to be very expensive compared with most microcomputer software (if not compared with mainframe programs from a similar environment) and few are available in the 'shrink-wrapped' form users upgrading from a PC will expect.

Ultimately, modern Unix is a mainframe operating system with all the complexity that implies. Administering a Unix system requires skill and takes time. Although it is no more complicated than most mainframe and minicomputer operating systems (and a great deal simpler than many) it still requires a radical shift in approach from the microcomputer user. Although things are getting better, it is still fiendishly difficult for a non-technical user to manage.

THE GOOD POINTS

Unix provides just the sort of environment programmers like best, which isn't all that surprising since it was written by programmers for programmers. It is fundamentally portable, which means that a program written for one system can easily be ported to another. The device-independent I/O allows developers to concentrate on writing applications, rather than printer drivers and the like. Since programmers like it, they write programming utilities for it which makes it even more attractive as a development platform for other programmers.

The Unix application portfolio is reasonably complete. Its traditional text-based accounting and manufacturing control packages have been around for some years now, and have been developed to satisfy user requirements. Recently, a host of 'power-user' applications for the workstation market have appeared, which help to make Unix the operating system of choice for compute-intensive stand-alone tasks.

Most of all, Unix is a standard. It may not be the best standard imaginable, but at least it's there. The portability means it is comparatively future-proof, able to cope with the next generation of hardware and even the one after that.

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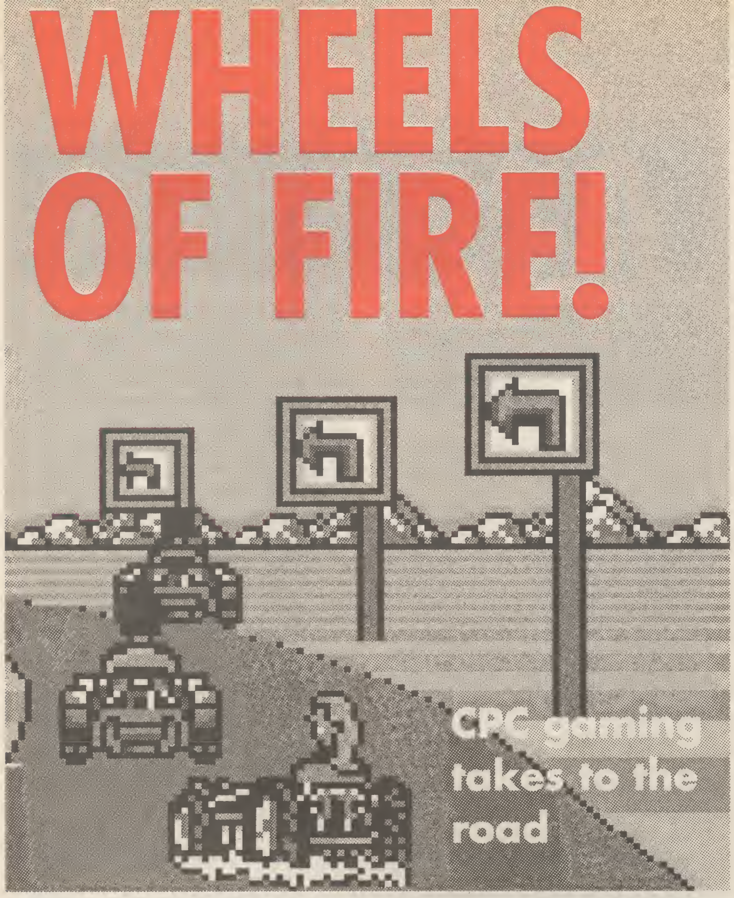
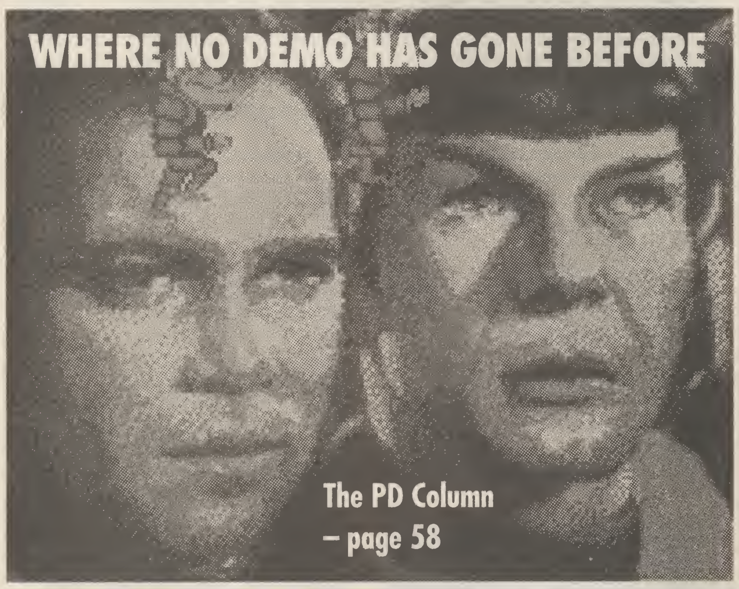


CPC gaming takes to the road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Amiga

SEGA GO AMIGA

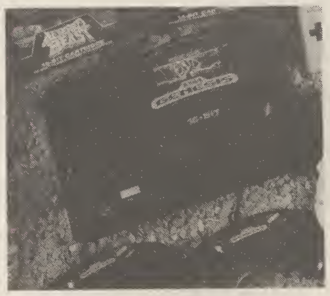
It's heart is a Motorola 68000 and it's got state-of-the-art graphics and sound chips. What is it? It's a Sega Megadrive. What's this got to do with the Amiga? Read on.

According to a source close to Sega in the States, the company has just pulled together a 40-strong development team for the sole purpose of producing games for its Megadrive system (or 'Genesis' as they call it in the States). Obviously you can't program a games console directly (where's the bloomin' keyboard?), so what machine are they using for cross-development? A PC-based PDS perhaps? Nope. An Atari ST perhaps? Nope. You've guessed it – the Amiga.

Sega chose the Amiga because the two machines are so close in capabilities that the Amiga is the ideal development machine. Already, Sega has installed a large number of networked '030-based Amigas (possibly A3000s) for use by its Megadrive programmers. Using the system, the programmers can write their code on the Amiga, and then have the executable spurted down to the Megadrive for testing.

According to a developer in this country, Sega originally intended making the development system PC-based. But, due mainly to the high costs (£20,000 per machine!), Sega has obviously opted for a much cheaper (and better) solution. This isn't the first time that the Amiga has been chosen as a development machine. Already Atari are using the Amiga as a development machine for their Lynx hand-held (although, admittedly, they didn't have a great deal of say in the matter!).

Sega is currently advertising in several major US publications for Amiga programmers and game designers who have both C and 68000 assembler experience.



• *Sega meets Amiga*

NEW TETRIS LAUNCHED

The Soviets have done it again! After the phenomenal success of both *Tetris* and *Welltris*, our Russian friends have come up with a third game in the series.

In *Faces*, you have to stack the falling blocks of face segments of famous people in the right order to assemble complete faces. All you have to do is swap the pieces, flip them and drop them into place- it's as easy as that!. Points are scored by building up as many faces as possible.

BOOKS FOR BOFFINS

Abacus has released three new books to add to its already enormous range of titles for the Amiga.

First up is *Amiga-DOS Inside & Out*, an updated version of its previous release. The book now includes all three popular versions of the Amiga OS (1.2, 1.3 and even 2.0!). Next up is *Amiga Printers Inside & Out* which is a complete guide to using printers with the Amiga.

Probably most interesting of all is *Making Music with the Amiga*, which is the first ever book to cover the musical aspects of the Amiga. The book shows you how to take advantage of the Amiga's musical capabilities through both MIDI and the internal sound chip. It includes programming examples and even a complete DIY project to enable you to make your own MIDI interface.

As soon as my review copies arrive, I'll be bringing you a full review. In the meantime, give AdamSoft a call on 0706 524304.

A1000 SAVIOUR

Comspec in the States has announced the release of a product which could breathe new life back into Commodore's first and arguably its best Amiga, the model A1000. The ARM-1000 is a handy little device that plugs into the expansion slot on the side of the A1000. With it, you can plug in ROM-based Kickstarts, including both 1.3 and even the new 512K 2.0 ROM. Once installed, the A1000 will use the currently selected ROM, therefore removing the necessity to boot kickstart from disk.

It seems that the A1000 is the Amiga that just won't go away. Commodore tried to kill it off for good by offering an upgrade that involved users sending their A1000 keyboards to CBM. Even so, the A1000 still seems to be going strong (indeed, I use a 2.5Mb A1000 to write this column every week!).

If you're truly in love with your A1000 (as I am), then there's no reason to scrap it just because Commodore says it's obsolete. Many third-party developers produce add-ons that will keep the A1000 up to date. For example, you buy card cages that allow the A1000 to use A2000 cards such as the bridgeboard, memory expansions, processor accelerators etc. Fit both Comspec's new ARM-1000 and the Rejuvinator card and you can even use both ECS and Workbench 2.0!

Not only that, but the A1000 is a classic computer. It is built from the finest components, and is perhaps the best looking Amiga so far. My advice to A1000 users is definitely to hang onto your machine – who knows, it could be worth something in years to come!

BOGUS VIRUS-X AGAIN

Once again Steve Tibbet's acclaimed virus killer, *VirusX*, has fallen foul to those dastardly virus programmers. Steve has warned all Amiga users to be on the watch out for version 5.0 of *VirusX*, which he insists is a rogue version of his virus killer. Although it is unclear what the rogue program does, it could well do more damage than good when used on disks. Version 3.30 of *Virus-X* was a rogue version that actually spread viruses instead of removing them, but it is believed that version 5.0 could be much worse. If you see version 5.0 on a bulletin board or within a PD library, contact the Sysop/PD proprietor involved and inform them of the situation.

Mutating a program like *Virus-X* is unfortunately all too easy, due to the fact that Steve freely distributes the source code with the program in an attempt to reassure people of his good intentions. The latest version of *VirusX* from Steve himself is *VirusX 4.01*, which is available from all good PD suppliers.

FROM ACROSS THE POND

Elan Enterprises has released a new version of the desktop presentation system *Elan Performer*. Version 2 supports even more image and animation formats (more than any other Amiga presentation package); has full ARexx support, including recorder and even MIDI applications; enhanced animation editing; and is both NTSC and PAL-compatible.

Do you feel held back by the Amiga's 4,096 colours? If so, then Psuedo Vision's *MegaPaint* could well be what you've been looking for. It's a 24-bit paint program that features multi-directional gradient fills and variable dithering, among other things, with 16.7 million levels of transparency, blending, smoothing and colourising.

The program uses Mimetics' FrameBuffer, so that you can even edit existing 24-bit images produced by such packages as *Sculpt-4D* etc.

Progressive Peripherals and Software has announced the release of a ray tracing add-on module for its 3D professional solid modelling software. The software lets you create fuzzy shadows and render blurred or imperfect transparencies, refractions and reflections. You can control different aspects of ray tracing, including the anti-alising amount, and even the number of rays per pixel. Isn't that marvellous?

Jason Holborn

Archimedes

DR PANGLOSS' REVENGE

I'm old enough to remember the time when 'direct drive' was a sticker put on the nastier-sounding lo-fi turntables in Dixons. For CD-age readers not attuned to these details, it meant the motor was connected to the platter without the benefit of a rubber belt, and it was somehow 'better' (they said). Of course when you actually listened, it sounded worse. And you were an elastic band down on the deal too! Now direct drive is the latest thing in laser printer technology from Computer Concepts and Calligraph, and I've had both machines on test.

The direct drive idea is relatively simple. A laser printer contains a sizeable computer to control the laser beam. It accepts commands from your ordinary computer, and draws a page of graphics into its own RAM. Postscript and Laserjet printers differ only in the type of commands they accept. Then, as the printer prints each page, it looks at the pattern of on and off bits in the RAM, and switches the laser beam on and off to match. (In much the same way, the electron beam in a monitor is switched on and off to reflect the bit-image in the computer's screen RAM.) The laser writes the pattern in static on a light-sensitive drum, the toner clings temporarily to the static, then is transferred onto the paper. Finally, the toner on the paper is 'fixed' by melting it — the last bit is identical to the way a photocopier works.

Direct drive gets rid of the electronics in the printer and makes the Arc do the work: the page is drawn into a 'spare' megabyte of RAM in your Arc. It's effectively a 1Mb sprite, eight by eleven inches at 300 pixels per inch, and drawn in exactly the same way that the Arc draws the screen image into the screen RAM.

Then, when the printer is ready, the bit pattern is read from the sprite and used to control the laser beam directly. The only real difficulty is doing it fast enough — the whole megabyte has to be sent to the printer at just the right speed, and in about four seconds.

So both the Calligraph Arclaser and Concepts' Laser Direct include a special interface podule, as well as a version of the well-tried Qume Crystalprint 'laser' printer. In fact the Qume isn't a laser printer at all, it writes the pattern on to the sensitive drum using a halogen lamp and a row of tiny liquid-crystal shutters. But the details needn't concern you — the print quality is every bit as good as a real laser, it suffers from fewer optical distortions at the edges of the paper, and large areas of black are uniformly black – not a murky grey.

So is it just another way of getting a toner stuck to paper? Yes. But it's especially fast and a bit cheaper than the competition because you're not buying a second computer. Normally, the printer lead is a serious bottleneck — it takes a couple of minutes to get a megabyte of graphics data down the line to a LaserJet printer. Postscript is quicker because it requires less data to be sent, but direct drive is faster still, as the ARM chip in an Arc is much faster than the 68000 chips used in PostScript laser printers. The table sums it all up:

	LaserJet	**PostScript**	**Direct**
Outline	Slow	Fast	Faster
Drawings	Slow	Fast	Faster
Sprites	Slow	Slower	Fast
System	Fast	Slow	Slow

The software for both machines is pretty neat. Both print near-flawlessly, both are properly WYSIWG, properly RISCOS, and both compress the 1Mb ➤

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sprite to take a little less memory (you do need at least a 2Mb machine though). Concept's even queues up pages in memory if they can't be printed fast enough, and Calligraph offers Epson LQ emulation for non-RISCOS software like *First Word Plus.*

Outwardly there are few differences between the two products, but my preference is for the Laser Direct, despite a slightly higher price. It is a mite faster particularly on outline fonts. But the real decider is that the lights flash (after my 'old fogey' comments on hi-fi, please don't laugh!). Concepts' machine gives you much more feedback on what's happening: is the page being processed, how many pages are waiting to be printed? The Arclaser is a no-frills, 'sit there and wait till I've finished' machine.

At a touch under a grand each, these machines are both very good value — Risc OS printers that are faster than PostScript, without the serious expense. Surely this is the best of all possible worlds.

HYPERMEDIA NEWS

Software Solutions is well known for *Genesis*, the 'hypertext' package included in the Learning Curve bundle. Now it's working on *Genesis II*, which is aimed at making it easier to create whole new RISC-OS applications of your own. The new version will be previewed at the *Computer Shopper Show* in December (Wembley Conference Centre, London, December 6-9), and released (probably) at January's BETT show at the Barbican in London.

It could face competition from *Magpie* — Longman Logotron's own hypermedia package. This too will allow the integration of pictures, drawings, text, sound and other resources in a single 'hypertext' style system. There is no truth in the rumour that *Magpie* was to be called *Revelation.*

TECHIE TIPS

It's an annoying fact that on some Archimedes, many applications crash occasionally: *Edit* and early versions of *Impression* are among them. The reason? The cause is often that there are too many fonts installed in the !Fonts directory; more than 30 and you've got trouble. But it's a shame to ditch all those fonts you've acquired. The solution is to keep your main set of fonts in the main !Fonts directory, and put the rest in supplementary font folders.

To set up a supplementary font folder, create a new directory called something like '!Fonts_A', and copy into it the font files, plus the !Boot, !Run and !Sprites files from your original !Fonts directory. Now open the !Sprites file using *Paint* and rename the two sprites '!Fonts_A' and '!sm!Fonts_A' to match the directory name.

You'll find you can now switch between the two collections of fonts by double-clicking on each folder. However, there's a better way of organising things: have only a core set of typefaces in the main !Fonts directory, and keep tiny collections of extra fonts in supplementary folders. You can then keep the core set and add one or two extra groups of fonts at a time. To do this requires only a small change to one file in each supplementary folder.

Normally when you click on a font directory, the Arc forgets about any previous set of fonts, because a variable called Font$Prefix is set to point to the folder holding the new set. But try using Edit to modify this line in the !Run file within a supplementary font folder:

```
    Set Font$Prefix
<Obey$Dir>.,<Font$Prefix>
```

Don't change the !Run file of the core folder. The effect this has is to make Font$Prefix point at the new fonts (held in <Obey$Dir>) and also at the old set (held in the old value of Font$Prefix). Clever eh? The comma in the middle makes the new Font$Prefix point at both folders. So now you can keep several font folders, a small core set and as many tiny extra sets as you want.

Clicking on one or two of these will add the extra fonts to the available list, and clicking on the core folder will strip the list down to the minimum again. Now all you need to remember is to fire up the fonts you need before starting the applications you're going to use, because applications like *Impression*, *Pipedream* and *Edit* take note of only the fonts that the machine knows about when you start them up.

APOLOGY

Last week, I inadvertently implied that the Microdrive golf game course designer was less than wonderful. After a word with his mother, I can assure you he's a marvellous chap really.

THE SMALL PRINT

Next week, something else, including (possibly) the reason behind the '10 things to do with your mouse' list a couple of weeks ago. It wasn't the idle space filler it appeared (honest). Computer Concepts is on 0442 63933, Calligraph is on 0223 461143, Software Solutions is on 0954 211760, Longman Logotron is on 0223 323656.

Ken Coumarin

PC

AMSTRAD'S CROSSROAD

The Amstrad CPC range – and now the Plus update – is at a turning point. The past couple of years have seen a steady decline in the appearance of new serious software packages for the machine, while the games industry has continued to pour out releases of ever-increasing quality. Within a couple of years, I think the serious side of the CPC – or maybe we should call it the Amstrad now? – will have essentially disappeared.

Now whether you consider that a

good or a bad thing depends, of course, on whether you're a games freak or a serious type. The thing is though, when the CPC was launched it was as a general-purpose computer, and in the early days it was supported very well by 'serious' publishers. To a degree, for the past couple of years, we've been surviving on these older packages – nothing really new and innovative has come our way for a long time. By this, I mean the best word processors, the best databases, the best spreadsheets have already been written. Sad, but true.

That this should have happened was only to be expected, with hindsight. Within a year or so of the CPC's launch, Amstrad was making PCs – in fact Amstrad, arguably, brought the MS-DOS market to the home user for the first time. And users who wanted a 'serious' computer suddenly had the PC1512 on their shopping list – or even the Z80-based PCW wordprocessor – instead of the do-it-all CPC.

Which, not surprisingly, has left many purchasers of the original CPC feeling let-down. What they thought was a computer for their home accounts, word processing and other intellectual uses has been turned into nothing more worthy than a games machine.

The launch of the console and the Plus could change all that – and it depends on Amstrad and the games publishers. Amstrad, not surprisingly, has aimed the new machines squarely at the burgeoning games market, while not ruling out the more serious users (ie retaining compatibility with the old models). What if Amstrad was to commit itself that little bit more, though? There are, as yet, no plans to re-launch the old Amsoft label and the wealth of excellent serious software that provided, but what if Alan Sugar's company was to do so? A risk maybe, but one which might secure the sale of thousands of Plus machines. The consoles look set for huge success anyway, thanks to the provision of thousands of in-store demonstrators and Amstrad's determination to sell the games alongside the machines. What if the same was done for the Plus? What if there were a special bundle consisting not only of the machines but a whole suite of software for business, or education?

Atari and Commodore have had great success with their bundles. And if Amstrad doesn't take the lead, what about the publishers? Games houses are committing themselves heavily to the new cartridge format, recognising that there are huge potential sales for them out there. Shouldn't the 'serious' publishers be looking at the Plus in that light, too? That machine is going to be getting a bigger promotional push than the CPC ever did apart from at its launch. With potentially thousands of those machines being sold over the next few months, isn't there a market out there to be seized?

The relationship between hardware and software is a symbiotic one. That is to say, if the hardware doesn't sell, neither will the software – and vice versa. However, if Amstrad can push the Plus hard enough, then the demand for software will be there as a result of this. And if people can see that large amounts of serious quality software are available,then there's presumably going to be a much larger demand for the machine.

So how do you make it happen? A message to Amstrad – sell the Plus in a serious educational bundle. And to the software publishers – there could be a good market out there, so get in quick!

The CPC Plus is an excellent general-purpose machine. There are others more powerful and more flashy, but I doubt there is a better one at its job – that of introducing people to computing. I'm afraid, however, that unless Amstrad and the publishers stick their necks out just a little bit more, it'll go down in history as computing's longest-running games machine, and nothing more.

WHEELS OF FIRE

And now on to more cheerful things, and Domark's *Wheels of Fire* compilation. *Heroes* was essentially a collection of old and feeble games, *TNT* was patchy but much better – but *WOF* is a really excellent package, well worth £15/£25 of anybody's money.

The four games on the compilation are *Hard Drivin'* (what, again? – it was on *TNT*, too!), *Turbo Out Run, Chase HQ* and *Powerdrift.*

Hard Drivin' is a 3D driving sim that lets you pick a 'speed' or a 'stunt' course driving a car that would challenge Nigel Mansell's skills, let alone a living-room racer. The problem is the usual one with heavy driving sims – over-correction. The 3D doesn't move fast enough to let you gauge how long to hold that opposite lock when you oversteer – with the result you to slide yourself into a whole heap of trouble. It's not all that good.

Turbo Out Run is also flawed, but in a rather more important way. It's rather too easy, and is inclined to be dull. After the first few goes, it all starts looking the same. But it does look good, and is not a bad conversion of the arcade.

Chase HQ is a good 'un. Driving a high-powered police Porsche, you take off after various felons. And when you catch up with them you just ram them into submission! About as subtle as a housebrick between the eyes, but tremendous fun.

Best of the lot, though, is *Powerdrift.* In this you race a cross between a dune buggy and a dragster around half a dozen different courses consisting of treacherous curves, log bridges and very solid roadside scenery. The idea is that you finish third or above in each race in order to progress onto the next – and tougher – one. Very, very playable indeed with lot's of nice touches – like your driver's grinning face becoming visible as his car gets thrown into a slide.

At £14.99 on tape and £24.99 on disk, *Wheels of Fire* isn't cheap. But for your money you get two, possibly three, excellent games and one not bad one.

DOUBLE-SIDED 3.5-INCH DISKS?

Peripherals supplier Microstyle has come up with yet another item to tempt Amstrad owners with. Now, with each drive it sells, you get a switch which lets you use 'both sides' of a 3.5-inch disk. Confused? Well, as an alternative to using one of the third-party extended DOS systems that lets you format these disks to 800K, Microstyle's solution lets you retain the standard AMS-DOS 178K format, but also lets you 'flip' sides to get a total of 358K. This means that you get a decent storage capacity out of your 3.5-inch disks as well as ➤

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being able to use your external drive as a genuine B-drive. Microstyle points out that this means these drives are a genuine replacement for the Amstrad DD-1s and FD-1s, which are currently going for bargain prices but are also no longer in production. Microstyle's 3.5-inch and FD-1 drives will also connect straight onto the 6128 Plus, too – at no extra charge (specify your machine when ordering).

Microstyle is at 212 Dudley Hill Road, Bradford, West Yorkshire BD2 3DF. Telephone 0274 636652.

Rod Lawton

64

STICKY SITUATION

Software designers working on cartridges for the new C64GS have got to remember that a significant proportion of their prospective users will soon be accounted for by people who have no keyboard. Therefore all game options will have to be made available from the screen only. However, while console owners aren't likely to find cartridges they can't use, conventional C64 owners might.

The new console comes with two Commodore joysticks. These are fairly straightforward devices with few frills. On the top of the stick is a fire button and another is situated on the base of the stick. Now it seems that in some cases, this second switch will have a specific function, such as game option selection, and that third party joysticks won't be able to select options made available to the second fire button on the Commodore stick. Is this likely to become a problem as 64 owners switch to buying games on cartridge that have been narrow-mindedly programmed for console owners only? I think we should be told.

Staying with joysticks for another paragraph, old-timer Spectravideo has been at it again. The Mega Board, it claims, is more than a joystick and it's certainly true that this enormous device has far more bundled features than you might expect. For a start, the Mega Board has two integral stop watches, both of which can count up as well as down. The idea behind this, say the manufacturers, is that you lot really want to test your game playing abilities in time as well as score and that these stop watches will provide a handy way of allowing you to do just that.

In addition to being stop watches, of course, they function as normal timepieces, so you can keep checking to see if *EastEnders* has started without tearing yourself away from *Turrican* until the last second. The Mega Board also has two other even more unusual features. Firstly, it allows you to slow down the rate at which the stick responds to your commands, thereby making games more of a challenge and you can alter the rate of the auto-fire mechanism. Is nothing sacred?

OK, staying with joysticks for just one more paragraph, those of you who use a mouse with your 64 when nobody's looking may get tired of spending half your time pulling leads from ports to switch devices. Indeed, you may have crippled your Commie before now as a result of just such clandestine activity. Well, Meedmore knows you're out there and has developed the Stickswitch just for you. This multi-port interface couldn't be easier to use and, apart from saving you time, it may do something positive for the life-span of your machine's joystick ports. You plug Stickshift into either port and it gives you two ports into which both your mouse and joystick can go. Either mouse or joystick is selected when you switch on the machine by pressing either the joystick fire button or the left hand mouse button, at which point an LED lights up on Stickshift to confirm your choice.

If you're worried about how much yanking you get up to, call Meedmore in strictest confidence on 051-521 2202.

ACCOLADE ATTACK

Millions have pretended that members of their families have represented hostile nations while playing Milton Bradley's famous board game Stratego, and have spent long and happy evenings getting a cathartic kick out of wiping brother, sister, father and mother-in-law off the face of the earth. Well, if this includes you and you've got no relatives left to annihilate, your xenophobic tendencies should be tingling at the thought of a computerised version of the game for the C64, coming via Accolade.

In dusting off the old title, Accolade has included new options that allow you to play on three variant boards (original, classic and modern), standard and tournament rules variations, a campaign option and a computer opponent with five skill levels. The game will be available on cassette and disk at £9.99 and £16.99 respectively.

A LITTLE BIT O'THIS 'N' THAT

Empire's new *Spiderman* game is about ready to climb the walls of your nearest software stockist. If you remember the hard time the web-slinger got from Adventure International five years ago, fear not. This time Pete Parker's much maligned alter ego has been given the treatment he really deserves, in a platform puzzle game. Now you can make Spidey climb walls, swing over perilous drops, walk upside down on ceilings and more, all in the aid of saving Spidey's girlfriend from Mysterio.

I like it a lot, this one. The animation is really good, even if the sprites are a little on the tiny side. If getting on the wrong side of the law is more up your street, my friend, US Gold will soon be making you an offer you can't refuse. They've just announced purchasing the licence for *The Godfather* and will be producing a series of Mafia games

Sean Masterson

Pc

CHESS WITH A TWIST

Battle Chess was an amusing game. It gave you a three-dimensional view of a chess board populated with OTT characters which were animated when you made a move. If you took another piece a miniature battle scene developed, with its climax being the spectacular demise of the appropriate piece. The key to *Battle Chess* was itsnse of humour

Now Electronic Arts has brought out a successor, called, predictably enough, *Battle Chess II*. It's based on Chinese chess, rather than the standard version we know and can't play, but the amusing animations are still there and with an Oriental flavour this time.

The actual game of Chinese chess is in fact rather more interesting than the conventional game. A river runs across the board and only certain pieces can cross it, similarly there is an imperial palace which some pieces, including the king, cannot leave. The movement conventions are also different to normal chess..

But, just as in *Battle Chess I*, it is the animations and music that make the game fun. My favourite is the cannon, which fires a ball across the board, reducing whatever it hits to a pile of ashes! The pawns are quite fun too, ducking and diving to avoid their adversaries.

Battle Chess II: Chinese Chess costs £29.99 from Electronic Arts, on 0753 46465. You'll need a decent graphics adapter to appreciate it.

ALL IN ONE

News in from the States has brought the PC-on-a-chip a stage closer. AMD, a licensed maker of Intel-designed chips, has perfected a highly integrated piece of silicon which incorporates a 80286 processor with memory, bus, EMS, clock, DMA and interrupt controllers. What that means in practice is that you only need add memory (RAM and system ROM) and a keyboard controller chip to make an AT. The new chip can control two AT expansion slots directly, so adding a graphics adapter and serial/parallel ports is no problem.

AMD says the new chip has very low power consumption and that, combined with its small size, will make it ideal for portables. A version of the chip will be available which will shut down the 80286 part if it's not being used, cutting power consumption still further. In America the chips will cost between $60 and $90 in quantity, so laptops using them should not be far away.

MORE CHIPS

Another new chip should make a drastic improvement to graphics. The chip, developed by Edsun Laboratories in America, is a RAM-DAC. A RAM-DAC (random access memory digital to analogue converter) is the bit of the graphics board which translates the pixel information held in memory into electrical signals of the appropriate strengths to drive the monitor.

Edsun's new device improves matters by gradually shading one colour into the next instead of abruptly changing at the pixels' edge. Strangely, thus blurring of the edges actually results in a sharper and more colourful image. The new RAM-DAC turns the 256 VGA colours into more than 700,000 shades, with an apparent resolution of 1,280 x 1,024. It works with a standard VGA monitor.

This technique, called anti-aliasing, is not new, but this new chip does it in hardware – the software doesn't have to do anything as long as a new graphics driver is installed. Even better the new chip is pin-compatible with the existing VGA controller chip, so in theory you can just plus a new chip into your VGA card. Unfortunately most chips are soldered on so can't be replaced, but look out for this chip in new VGA cards.

NOT A LOT OF PEOPLE...

DOS has a few commands hidden away which are not in the manual. For instance in MS-DOS 4.01 the is a command called TRUENAME which will return the path name of any file you specify, whether or not it has been altered with the ASSIGN, JOIN and SUBST commands. I can't think of a use for it off hand, but I'm sure someone out there can. Any ideas?

TIPS

Most reasonable applications will cooperate in running a utility or two, even venerable old *WordStar*. But there are often limitations; they may intercept DIR calls for example, and use their own built in alternative. One way around this is to call COMMAND. COM, or just type COMMAND. This builds a shell – at a cost of 3K or so – but it behaves just as if you have a clean machine, albeit with less memory. This even works from within batch files.

For those running versions of MS-DOS prior to 3.3 this is the only way to run a batch file from within anther batch file and return to the original batch file. Here's the first batch file:

```
ECHO OFF
ECHO FIRST BATCH FILE
COMMAND /C SECOND
ECHO HERE WE ARE AGAIN
```

and here is `SECOND.BAT`

```
ECHO OFF
ECHO FANCY SEEING YOU HERE
EXIT
```

and we're back again. Notice the EXIT command. The EXIT isn't really required in this example since it uses the /C switch to tell `command.com` to give up and die after executing one command, but in a batch file designed to run several utilities you have to include it in order to get out of the shell.

You can try all this out from the command line prompt. Just type COMMAND. If you run CHKDSK before and after you can see that though everything looks the same you have less memory – you're in a shell. Type EXIT at the prompt and run CHKDSK again and all is as before.

Stuart Anderton
and Steve Patient

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ALL FORMATS FAIR

We all know Christmas is a time for peace, goodwill to all men and spending lots of money, so it's not surprising to see there's an All Formats Computer Fair strategically placed for Chrimbo on December 15. As usual it's taking place at the New Horticultural Hall in London and for £3 you'll be able to experience this jumble sale of the computing world which is bound to have lots of Speccy and Coupé stuff on offer.

Advance tickets and details of stand prices are available from Mike Hayes, 8 Midgrove, Delph, Oldham OL3 5EJ.

GORDELLO RETURNS

Achtung all you adventurers! Here's a new release undoubtedly worthy of your attention. *Gordello's Demise* is the latest from the consistently brilliant Tartan Software and is the long yearned after sequel to *The Gordello Incident*, the first part of which was given away free with *Your Sinclair*. Apparently the evil doctor type survived the first game and this follow-up expects you to pop the baddies clogs once and for all. Confusingly, it's set in the same locations as part three of *The Gordello Incident*, with the same problems but different solutions..or something. If you enjoyed the first one, or are one of those really annoying people who enjoy solving complicated puzzles rather than waggling a joystick, then this could be for you.

The price is £2.99 from 61 Ballie Norrie Crescent, Montrose, Angus, Scotland DD10 9DT.

TIPS

I haven't given you any Multiface pokes for a while, so here's a batch of the things, courtesy of our old friend Jon Rose. You need to insert them into the appropriate game with the aid of Romantic Robot's thoroughly smashing Multiface widget. Jon's also the editor of a very good independent Speccy mag called *Enigma* that I've plugged loads of time in the past. The next issue is going to be a bumper Christmas bonanza, due out in December. It'll have a professionally printed inlay and be crammed to bursting point with suitable festive japery. I'll review it as soon as I get a copy. Thanks Jon!

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SAM COUPÉ

I said I'd mention the Coupé from time to time, despite the fact that the SAM part of the column is no longer in the building and has purchased an agricultural small-holding etc. Well, now seems like a good opportunity, because I've just been playing with the latest batch of SAM games from those fervent Coupé supporters – Enigma Variations. Its collective follow-up to the excellent *Defenders of the Earth* comprises three games – *Famous Five*, *SAM Multipack* and *Mindgames*.

I've covered all threeof these titles in the latest issue of *Your Sinclair* (available now from all good newsagents and probably most crap ones as well), so here's a succinct but telling overview.

Famous Five's an adventure based on Enid Blyton's great contributions to English literature. You get to switch control between any of the four chums, as they attempt to foil some dastardly caper on the usual mysterious island; so you can be bone-head Julian, smarmy little Anne, or transvestite George – depending on your fancy. Timmy the dog is unfortunately not available for manipulation. The spirit of the original books seems to have been successfully recreated on the SAM with spooky happenings, wizard japes and, of course, lashings and lashings of ginger beer spread throughout the game at regular intervals.

Adventure fans and people who actually like the original books should love this faithful adaptation, although at the end of the day it still doesn't seem any better, either technically or aesthetically, than some of the adventures I've played on the Speccy over the years. Still, pretty enjoyable all the same, although I think it's about time someone converted the new right-on Noddy into a game. A very violent beat-'em-up should do the job.

Then there's the *SAM Multipack* which is a double feature comprising *Futureball*, a future sports sim and *Sam Strikes Out* a platform game starring that little robot character we all know and er, love, apparently.

Both games utilise SAM's superior graphics and are a good deal more colourful than most Speccy games on thre market, but unfortunately, in my opinion, they both fall down when you actually get to the joystick waggling bit. Both are fairly boring, poorly designed affairs that tend to induce comatose states on the second or third go and I can think of loads of Speccy games that are less impressive audio-visually but are likely to have you playing for eons longer. And at the end of the day that's the most important thing.

The last package is *Mind Games*, a collection of four titles that are meant to be simple in design and execution but completely addictive. Unfortunately, none are in the least bit compelling and this time the graphics and sound aren't up to Speccy standards either. They are all pretty crap really, looking like refugees from a copy of *Sinclair*

Programs circa 1984 and can't really be recommended, even if you've bought everything else.

All three packages cost £11.99 on tape or disk from Enigma Variations, 13 North Park Rd, Harrogate HG1 5PD. And if anybody should happen to buy any of these, please let me know what you think

Robin Alway

ST

ATARI ACCUSED OF BANNING UPGRADES

Alan Hopley, Sales Manager of Best Prices, has launched a scathing attack on Atari, claiming that its decision to change the internal design of the STE is an attempt to halt companies from producing their own expanded 520STE machines.

When first released, the STE was able to accept plug-in RAM upgrades known as SIMMS, which enabled a standard STE to be upgraded to 4Mb for less than £250.

Now, however, Atari is producing the STE with surface-mounted RAM chips. Although SIMMS are still used, they are now soldered directly onto the motherboard, rather than being fitted into sockets.

"Atari has informed us that it has done this to bring down production costs," says Hopley, "and enable them to fits the STE RAM by machine in the factory." (Up till now the SIMMS have been fitted by hand.)

"However," he goes on, "it must remain a possibility that Atari may have changed the design in a bid to halt companies such as ourselves from producing expanded 520STE machines (in 0.5Mb, 1Mb, 2Mb and 4Mb versions) instead of selling Atari's own 1040STE, Mega 1, Mega 2 and Mega 4 STs."

According to Best Prices, anyone who buys a 4Mb STE from that company has been able to at least £500 by not buying the Mega 4.

Atari has confirmed the new design, and stated that all new stock will have surface-mounted RAM, identifiable on the box by being marked 'W/O,' standing for 'With Out' RAM sockets.

But Best Prices has told *Express* that it has secured large stocks of the expandable STs and can continue to offer 1, 2 and 4Mb upgrade versions for some time.

But Hopley offers as a guess that there are no more than 500 socket-expandable 520STEs left in the UK for direct sale to the customer.

Once these machines have been sold, the only way ST users will be able to expand their machines will be to solder SIMMS directly to the motherboard, requiring a soldering iron and invalidating their warranty.

Contact Best Prices at Unit A, Grafton Place, Worthing, West Sussex BN11 1QX, or by calling 0903 700714.

ATARI MOVE TO KILL DMA COMPLAINTS

The November issue of *ST Format* revealed that some STEs had been found to be suffering from DMA-chip problems, leading to users having difficulties with hard drives.

Now Atari has announced that all new STE stocks marked with a red dot next to the serial number will have the new DMA chip set. So if you're thinking about upgrading to the STE, or know someone who is, make sure you see red dots before your eyes!

THAT ATARI TRAIN SHOW

First reports suggest that Atari is feeling well chuffed (sorry) with itself after its first 'Whistle Stop' tour, visiting half-a-dozen cities by train.

I was there the very first morning at Bristol (greetings to everyone I talked to there), and the queues were indeed considerable – not least because of some ludicrous notion that every visitor was to write their name and address, a bizarre idea that lasted less than an hour.

Attendances were excellent throughout, I understand. If you visited the train tour I am very keen to hear your views on it. Was it the success Atari claim? Was it well organised? Would you go again? Write to Atari Train Tour, Steve Carey, Future Publishing, 30 Monmouth St, Bath BA1 2BW.

BATH BBS GOES SNAIL-MAIL

The ST-based Bath bulletin board is one of the country's biggest and best, claiming to be the only one offering a multi-line service.

Now the Bath BBS is aiming to expand its service with a postal bulletin board service. On joining you're sent either a printout or disk according to your preference containing a list of available public domain files and all current messages, plus full details of message formats and so on. You also receive two disks full of your own selection of PD software from BBS's library.

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The Bath BBS postal service costs £10 for an annual subscription. Order forms from Bath BBS, 43 Midford Rd, Bath BA2 5RW.

(And before you ask, no, the Bath BBS is not connected in any way with Bath-based Future Publishing, publisher of *Express*.)

SIGNA GET TT GOING

ST business/'high-end' specialist Signa has announced that it has now taken a substantial order of TTs for sale from mid-November. "We've had a lot of experience already with the TT," Signa's Mike Dale told me, "and virtually all the ST software we have in-house has worked with no problems.

"The TT is stunningly fast, which of course brings more to those users who currently rely on the ST to make a living. We are opening our offices seven days a week on an 'open house' ➤

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basis for all to come, see and try the TT for themselves."

Dale tells me that the first batch is already selling very well, and he's convinced orders will increase dramatically, once people see the machine for themselves. Prices begin at £2,000 (plus VAT), and Signa is offering leasing as well as part exchange deals for those wanting to upgrade to the TT.

For further information call Signa's southern office (0252 341600) or nothern office (0742 823155).

CHECK IT OUT, MATE

A warm welcome if you would for *Chess Mate*, an ST opening repertoire/learning aid for all chess players. Its purpose is to provide chess players with an easy way of learning chess opening variations.

It enables the player to create a repertoire, or alternatively learn from a repertoire, with disks to be released in the future. The first such disk, 'Opening repertoires for the 90s,' comes with the program itself and contains over 500 variations.

The idea is that you learn from the existing 500-plus opening variations already on file. More importantly you can enter and store opening variations, thus creating your own personal opening repertoire.

When you want to train yourself in a particular opening line, your ST monitors your progress and records your mistakes during the game. Then you put that line onto the Learn file and remove it only when you're confident you know it.

Depending on the popularity of *Chess Mate*, other disks are planned for release, such as *Sicilian Nadjorf* and *French Winawer*.

But isn't the £49.95 price tag a bit stiff? Not altogether surprisingly Carl Shelbourne, boss of Chess World Software, which is publishing the program, doesn't think so. "Consider something like *ChessBase*," he says, "which runs only on 1Mb STs and needs a mono monitor.

"Besides, *ChessBase* is a full game database for use primarily by chess masters, while *Chess Mate* is designed for the storing and learning of chess openings, with a maximum of 50 moves (25 each for white and black), for use by club players."

Chess Mate costs £49.95 and runs on any ST. There's also a demonstration version available for £5, refundable when you buy the full program. Order either from Chess World Software, 196 Scarisbrick Drive, Liverpool, or call 051-256 8178.

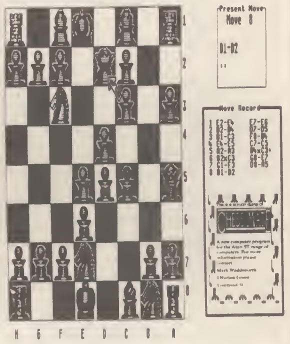
GET DOWN, MY MAN

Hello young 'funky' people. Er, 'street... rad... crucial...,' my man. I am given to understand, 'daddy-o,' that Microdeal, one of the, er, 'hippest' companies producing hardware and software for the ST, has had something of a success with its *Replay* sound sampler.

Now I gather, 'man,' that both it and the ST is featured extensively in the latest video from those 'groovy mothers' King Bee, who I am reliably informed are one of the UK's top dance groups. The video, getting consdierable airtime on MTV, is for their latest single *Must Be The Music*.

Erm, 'alright,' apparently. Replay, claimed by those 'hep cats' at Microdeal to be 'the world's most used sound sampler for home computers,' has also just been updated for the third time and now calls itself Replay 8. It costs a 'well cool' £79.95 from Microdeal on 0726 68020. 'Chill out, bro, OK?'

Steve Carey



• *Brush up your opening gambits and such like, with Chessmate.*

Macintosh

WHAT UTILITY

I thought that this week we'd look at a couple of the 'utility' programs available for the Macintosh. Although there are other programs which do the same job as those that I've listed (*Font Juggler* in the case of *Suitcase*, *SUM Utilities* and others in the case of *Norton*), the ones that I've listed are my personal favourites, and those that I consider do the best job.

SUITCASE II

This program is one of the most popular utilities available for the Mac. Although it may well become redundant when (if!) System 7 finally appears, until then it remains extremely useful – and easy to use, too.

The program is an INIT which allows you to use fonts and desk accessories (DAs) without installing them into your system file using the Font/DA mover. Users of the Mac will know that installing fonts and DAs takes time, and requires you to restart your Mac before they are usable, especially if you are running under MultiFinder. Moreover, the standard Apple system only allows a maximum of about 15 desk accessories to be installed at any one time. While this is fine for the more minimalist users amongst you, we add-on freaks can quickly become frustrated at this limitation.

Suitcase II removes these niggles: as long as you only have a maximum of twelve suitcases full of DAs and fonts open at one time (and any number of DAs can be combined into a single suitcase), the number of active DAs is limited only by how many you can be bothered to install (I have about 30 in my Apple menu at present). Fonts, sounds and FKEYs can also be added and removed as the mood takes you – and all with just a few mouse clicks.

As mentioned above, System 7 will remove the need for this program (I'll take a closer look at what System 7 will offer next time), but since its release-date has been put back yet again, this time until the second quarter of 1991, *Suitcase II* remains an excellent purchase for any Macintosh user. It's available from most Mac software suppliers, including Riva Systems (0420 22666).

NORTON UTILITIES FOR MACINTOSH

PC users will be familiar with the name Norton already – *Norton Utilities* is the major disk-repair package in the PC world. Now, Peter Norton Computing has brought its computer knowledge to the Macintosh area – and the result is a very impressive package indeed.

Norton Utilities for the Macintosh comes as a suite of programs to repair disks, along with some handy INITs and DAs such as a replacement for Apple's Find File which works about four times as fast – which is handy if you're searching an 80Mb hard disk for a file that you've lost!

Taking the program's functions one at a time, the main, and most-used, is Check Disk, which ensures that any minor faults on your hard disk are discovered and corrected before they grow into major faults. Running Check Disk once a week or so will reduce the probability that you will ever suffer a serious data loss. It's easy to use, and explains in simple terms what any error messages mean. It also lets you know whether any faults which it finds are serious or minor, and tells you whether you should choose to have the program fix them or not.

Next most useful is the Un-Delete section. If you've ever dropped a file into the wastebasket and emptied it, then suddenly realised that you've trashed the wrong file, this is the routine for you. Un-Delete quickly and painlessly scans the disk for deleted files, and lets you know the probability that it will be able to recover them for you. A mouse click later, and the file is safely back on your desktop.

Format Recover is for heavy-duty disk crashes. I can't really comment on how well this part of the program does its job because, although I've had a hard disk crash or two since I started using *Norton*, Check Disk has always repaired it for me, without the need to resort to Format Recover – which says something about the power of Check Disk.

Finally, Speed Disk is a disk de-fragmentor, which speeds up the performance of your hard disk by (surprise, surprise) de-fragmenting it – that is, joining up files on the disk rather than storing them as a number of separate fragments, thus reducing the amount of jumping about that your disk head has to do whenever you launch an application.

There are other whizzy bits to *Norton*, such as a neat little icon that appears in the menu bar whenever a disk is accessed (it sounds pointless, but you'd be surprised how soon you become dependent on it) and a very useful utility which replaces Key Caps with something much more powerful, but there isn't really space to go into all the bells and whistles here. If I've sounded rather enthusiastic about *Norton Utilities for Macintosh*, that's because it's simply the best disk utility package for the Mac that I've come across so far. The obvious competitor is *SUM Utilities*, but that's just too complicated and awkward to use for my taste. Another package, *Microcom 911 Utilities*, is due out in the very near future – I'll let you know what it's like when I've seen a copy.

Norton Utilities for Macintosh is available from Softline: 081 642 4242.

POSTCARD FROM AMERICA

And now, all the way from the USA, we present the first 'Postcard from America'. These will be written by a gentleman named David Morgenstern, long-time Mac lover and leading light in the largest Macintosh user group in the world, BMUG (the Berkely Macintosh Users Group). His reports tend to focus on the more offbeat side of Macintosh happenings. Take it away, David...

"It's no joke, but I'm computing with spiders. My wife is a big animal lover, and we're inundated. Everyone tells me they're busy eating bugs. I've got enough trouble with software bugs – hardware I don't need!

"I seem to be the only computer person that caught this strange item in Entertainment Weekly. Get ready for a new level of user-friendly computing in the syndicated television series, 'The New Lassie'. Lassie, the latest incarnation of the dog we know and love, will use a computer!

"Lassie pushes the mouse around with her nose to make selections. The show was written by Tom Rettig, who appeared in the first Lassie TV series in the States. He claimed, 'It's a pretty plausible script. I mean, we don't have Lassie working with any complicated software or anything." You mean that Lassie can't handle a flat file database?

"This is a whole new market for software publishers – dog productivity programs. Lassie might want to keep track of fire plugs, and bushes in the neighbourhood. She might want to run a spreadsheet to see if her agent was dipping into her savings. There are obvious opportunities for adventurous companies here.

"*HyperCard 2.0* finally went 'golden' the other day, but Apple's plans to give it over to Claris made users see red. Apple spin-masters are in a sweat. They've got to sell the following mission impossible: the Macintosh is a really great computer that costs many times more than the competition. You used to get a cutting-edge object-oriented programming environment, and hypertext software, as bundled system software – free. But now you'll have to pay lots extra for it. All right!

"The Apple marketing team must have gotten this idea while waiting for the government bids to arrive in the mail. Less service for more cash. An idea only a bureaucrat could love.

"Finally here's a fun HyperCard 2.0 trick. Hold down the option key when selecting About HyperCard under the Apple menu. Your Chooser name will appear in the opening line of the credits. The line usually picks one of the actual development team members at random."

Ian Wrigley

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(Despite what you may have read.)

It's no real surprise that most reports of the conclusion to the long-running saga concerning the "look and feel" copyright lawsuit brought by Lotus Development Corporation of Boston, against **Paperback Software International Inc.**, of Berkeley California have tended to emphasise the sensational, and avoid important details. New Computer Express was no exception.

But by being incomplete, these reports have allowed a very misleading interpretation to be placed on the actual event.

The fact is that **Paperback Software UK Limited** has not been and is not involved in any way with the corporate and litigious affairs of Paperback Software International Inc., of Berkeley, California. Paperback Software UK Limited is an independent UK owned company that publishes, co-publishes and distributes a broad range of software, from a variety of sources. *VP-Planner* happens to be one of these titles.

Paperback Software UK Limited endorses the views expressed by Lotus, encouraging competition, creativity and innovation in software development. That's why Lotus developed 1-2-3 from the original concepts of Dan Bricklin's *VisiCalc* software, and VP-Planner built on the Lotus standard, but also included additional features that have subsequently been adopted by Lotus and others.

There has never been any question whatsoever that the code and programming of VP-Planner has been in any way copied or reverse engineered from the code of 1-2-3. We take strong exception to the innuendo in the use of the word "theft" in the press release issued by Lotus.

The issue for us - and you - should be that of the functionality and value of the software. This aspect has been a casualty of the war of litigation between Lotus Development and Paperback Software International, being far less interesting for bloodthirsty journalists, seeking to highlight the confrontational and melodramatic aspects of the case. And all the while Lotus has been busy teaching PSI a lesson in the economics of US litigation, MicroSoft with Excel, and Borland with Quattro, have been making considerable inroads into Lotus' dwindling market share.

The user interface developed by 1-2-3 is a minor technical aspect of the software; but at one point in time, the encouragement offered by Lotus - and virtually demanded by journalists - to conform to what many described as the "industry standard" suddenly became an 'infringement of copyright'. It is the work of an afternoon for the developers to change it...

In fact, we were relieved to realize that the shackles of Lotus conformance, required by PSI for the US marketplace, had been cut loose by the decision of PSI to submit to Lotus's demands, and return the exclusive rights to the 1-2-3 interface to Lotus.

But where does Digital Research now stand with the question of DR DOS and MSDOS? What does this mean for IBM and all those who chose to borrow the look and feel of the IBM PC? When proprietary environments like Windows and the Apple Mac interface positively make a virtue of their consistent look and feel, just who are we all to believe any more?

But there is one thing of which you can all be certain. Paperback Software UK Limited is most certainly not stopping selling superior spreadsheet (and other) software at prices that make large publishers, with large overheads and large expenses, wince. We have many innovative features in development that can be made simpler, faster and more intuitive by taking a more logical approach than slavishly following a 1-2-3-like interface.

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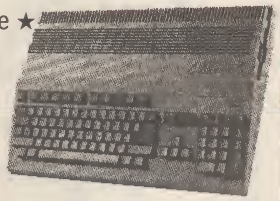

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ATARI DEALS

DISCOVERY PACK 520ST-FM 512K RAM

HARDWARE:

520ST-FM computer & mouse, internal 1Mb disk drive, modulator & PSU	£299.99
SOFTWARE - *ENTERTAINMENT*	
BOMBJACK - platform style game with excellent graphics	£19.95
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FIRST BASIC - easy to use BASIC programming language	£49.99
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STOS GAME CREATOR - create sprite based action packed games	£29.95
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BOOK: DISCOVER THE ATARI ST - comprehensive introduction to ST	£6.95
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KONIX MEGABLASTER JOYSTICK	£6.99
HIGH QUALITY MOUSEPAD	£6.99
DUST COVER	£6.99

TOTAL RRP OVER £510 OUR PRICE £259.95

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HARDWARE:

520ST-E COMPUTER & MOUSE, INTERNAL 1Mb DISK DRIVE, MODULATOR & PSU	£399.99
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★ stereo sound ★ new blitter chip ★ extra joystick ports ★

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All of printer ribbons are GENUINE manufacturer ribbons - we do not sell inferior copies!

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5 x LC10 Colour Ribbons	£24.95
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8833 + STE cable	£249.00
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512K Ram Upgrade with clock	£39.95
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Photon Paint version 2 (Amiga)	£39.95
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AMIGA PACK 1 : F29/R.Bow Island/ Robot Monst/DPaint 2	£19.95

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UNBRANDED 3.5" HD	14.95	27.95	39.95	59.99	115.00
SONY BRANDED 3.5" HDD	27.50	53.00	77.00	120.00	235.00
UNBRANDED 5.25" 360K	3.25	6.25	9.25	14.95	27.50
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A500 BASE PACK

*** Commodore Amiga A500 computer**
*** Modulator, Mouse + instructions**

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SPECIAL ANNOUNCEMENT !

IF YOU ARE THINKING OF BUYING AN ATARI STE THEN READ THIS FIRST !

Atari have now confirmed that all future shipments of Atari STE computers will no–longer have the sockets allowing simple expansion using plug–in SIMM memory modules. The new design will involve de–soldering existing RAM and soldering directly to the PCB any new RAM expansions (thus invalidating your warranty) – thats the bad news. The good news is – We were the FIRST dealer in the country to discover this and we instantly secured a large stock of the last remaining easily upgradable machines in the UK. There will be no more. We are offering these machines with and without expanded memory etc (see below). As an added bonus, Atari have also confirmed that all new shipments of STE computers will have the new DMA chip set. This will enable trouble free operation of Atari hard disk drives. Until now there have been some machines which have caused problems with Atari hard disk drives (see NCE Issue 102 page 9). REMEMBER – ONCE STOCKS OF THESE MACHINES HAVE GONE THERE WILL BE NO FURTHER STE COMPUTERS WHICH CAN BE EASILY UPGRADED WITHOUT AFFECTING YOUR WARRANTY. WHICH MEANS BUYING A 4 MEGABYTE MACHINE "OFF THE SHELF" WILL MEAN BUYING A MEGA 4 ST (WITHOUT THE STE FEATURES) AT OVER £1000 !! ***RING TODAY FOR FURTHER DETAILS***

REMEMBER : ALL PRICES INCLUDE DELIVERY + VAT

ATARI STE

THE ATARI STE TURBO PACK

Consists of STOS Games Creator, First Basic, Hyper Paint II, Music Maker II, 8 great games (Indiana Jones & the Last Crusade, Impossible Mission II, Human Killing Machine, Super Cycle, Outrun, Dragons Breath, Anarchy and Blood Money) and a joystick

520STE 512K TURBO	**£369.00**
520STE 1MB TURBO	**£389.00**
520STE 2MB TURBO	**£439.00**
520STE 4MB TURBO	**£549.00**

THE ATARI STE POWER PACK

Consists of 20 great software titles (Afterburner, R-Type, Gauntlet 2, Super Hang On, Space Harrier, Star Glider, Overlander, Super Huey, Pac Mania, Nebulus, Eliminator, Predator, Xenon, Bombuzal, Bomb Jack, Double Dragon, Black Lamp, Out Run, Star Goose and Star Ray) and a joystick.

520STE 512K POWER	**£389.00**
520STE 1MB POWER	**£409.00**
520STE 2MB POWER	**£459.00**
520STE 4MB POWER	**£569.00**

All STE computers are checked prior to despatch and all prices include VAT and delivery by courier. PLEASE RING FOR CURRENT PRICES AS THEY DO SOMETIMES CHANGE !!!

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DIY 2 KIT – 520/1040 to 2MB **(2 x 1MB cards)** *SIMMS or SIPPS*	**£109.00**
DIY 4 KIT – 520/1040 to 4MB **(4 x 1MB cards)** *SIMMS or SIPPS*	**£205.00**

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- ⋆ **Atari 520STFM computer**
- ⋆ **20 top selling games** (Afterburner, R-Type, Gauntlet 2, Super Hang On, Space Harrier, Star Glider, Overlander, Super Huey, Pac Mania, Nebulus, Eliminator, Predator, Xenon, Bombuzal, Bomb Jack, Double Dragon, Black Lamp, Out Run, Star Goose and Star Ray)
- ⋆ **Mouse, Joystick and instructions**

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or maybe try our 520STFM DISCOVERY PACK at only £ 279.00

SM124 HI-RES MONOCHROME MONITOR

THE ATARI SM124 HIGH RESOLUTION MONOCHROME MONITOR is recommended for all serious applications on the Atari STFM / STE. For example : Word Processing, MIDI, DTP, CAD etc etc. Resolution : 640 x 400

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Afterburner, R-Type, Gauntlet 2, Super Hang-On, Space Harrier, Star Glider, Overlander, Super Huey, Pac Mania, Nebulus, Eliminator, Predator, Xenon, Bombuzal, Bomb Jack, Double Dragon, Black Lamp, Out Run, Star Goose and Star Ray.

All of the above games are available in the Power Pack Software pack for only – **£34.99** – thats less than £1.75 each !

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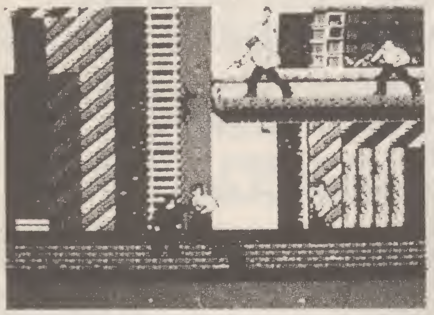
THE CONSOLE ZONE

Your weekly guide to console gaming with Richard Frederick.

ZONE COMMENT

What do you think of the Nintendo NES and Atari Lynx adverts on TV? What are your favourite video games? Have you found any hidden features in your latest console game? Which computer games would you like to see converted over to your console? We want your views on any subject connected with console gaming. Send them to The Console Zone, *New Computer Express*, Future Publishing, 30 Monmouth Street, Bath, Avon BA1 2BW. Fax 0225 446019.

NINTENDO ENTERTAINMENT SYSTEM



• *Go ahead punk — make Mindscape's day.*

Are you ready to make your day, punk? *Dirty Harry* is about to be captured in silicon by Mindscape. You take on the role of tough San Francisco detective, Harry Callaghan, as you try to smash a drug-smuggling syndicate.

The game features multiple levels, and you shoot it out in the streets and alleys, search and seize in rundown buildings and find slimy surprises in the sewers before the show-down on Alcatraz. *Dirty Harry* – the NES game even features digitised sound. And let's not forget Harry's weapon, the .44 Magnum – the most powerful handgun in the world – which can blow your head clean-off. So you've just got to ask yourself a question. Do you feel lucky? Well, do you, punk?

PLAYING TIP

Face the final battle in *Godzilla* by entering: 'DESTROY ALL MONSTERS'

NEC PC ENGINE PLAYING TIP

Get yourself some more credit in *Legendary Axe* by:holding down:
Button [I], [Select] and [Left]

NINTENDO SUPER FAMICOM

Final Fight has been converted over from the successful Capcom coin-op. This Super Famicom beat-'em-up even includes a two-player mode – you and a friend can fight against each other in this mode. *Final Fight* is scheduled to be released in Japan early next year for 8500 yen (£34). The Super Famicom console itself will be launched later this month priced at a mere 25000 yen (£100).

NINTENDO GAMEBOY

When games get boring in your neighbourhood, who ya gonna call? Columbia Pictures Industries, Activision and Hal have got together to bring you the Gameboy version of *Ghostbusters 2*. Spengler and the boys are back in a fun shoot-out with spooks, ghouls, ghosties and the odd tax–inspector. Even Slimer makes an appearance! *Ghostbusters 2* costs 3,400 yen (£13).

PLAYING TIP

Having trouble getting on the flying rocks in *Super Mario Land*? No problem - thanks to Jay Lee from the Netherlands: when a rock hits the wall, wait a split-second then jump on it and away you go. Plus, try going down when standing on a pipe (where the plants and cannons come out) to enter the secret rooms containing lots of goodies. Finally, extra high jumps... 'sit down', then press the jump button.

WAKE UP!

Come on you lazy lot, where are all your tasty tips and hot hints? We need your playing tips for any video games available for the Megadrive, Gameboy, Lynx, Game Gear, Sega Master, PC Engine, NES and Neo-Geo.

Send everything into the Console Zone, 30 Monmouth Street, Bath, Avon BA1 2BW. Or call us on 0225 442244 or fax 0225 446019.

ATARI LYNX PLAYING TIP

Thanks to Simon Marston for these *Blue Lightning* passcodes:

MISSION 1: AAAA
MISSION 2: PLAN
MISSION 3: ALFA
MISSION 4: BELL
MISSION 5: NINE
MISSION 6: LOCK
MISSION 7: HAND
MISSION 8: FLEA
MISSION 9: LIFE

MEET THE BEST

Can you meet the Console Zone challenge? Send us your top scores on the Megadrive, Gameboy, NES, Game Gear, Sega Master, PC Engine, Lynx and Neo-Geo to the usual address.

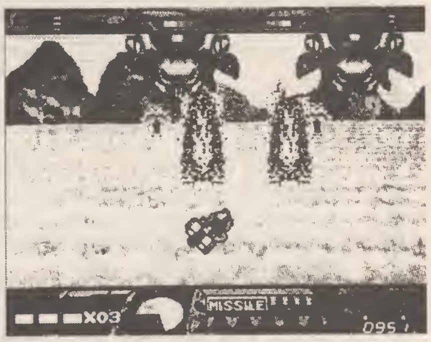
GAMEBOY		
Batman	424.060	Peter Worth
Super Mario Land	474,170	Jay Lee
Tetris	396,064	Peter Worth

SEGA MASTER SYSTEMPLAYING TIP

Continue up to level 17 of *Afterburner* by pressing [Pause] 100 times on the title screen - then press [Up], [A], [B] during the game.

SEGA MEGADRIVE

Fly your 22nd century air-bike through 22 areas of robot-infested space-scapes in Namco's *Burning Force*. In a departure from the 'norm', you play a female pilot, Hiromi Tengenji, on a graduation course in advanced space combat. You can kick it into overdrive for just 5800 yen (£23).



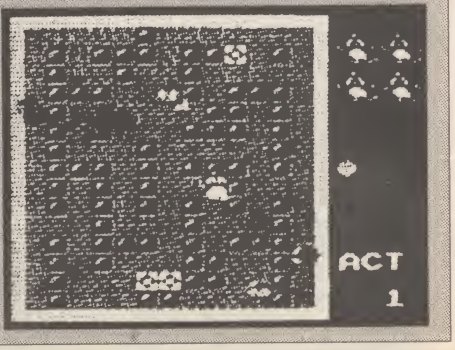
• *Bike-riding in the 22nd century.*

PLAYING TIP

Want to have a cool $9,999,999,990 to spend in *Super Hang On*? Enter the passcode: 6FF3F546F 355 64 FF0SLP1MFJEDGH

SEGA GAME-GEAR

This one's for coin-op cowboys with long memories, *Pengo* has just been released on the new Sega Game Gear colour handheld console. This classic Sega arcade puzzle game only costs 2,900 yen (£12). The Sega Game Gear should be officially launched into the UK next year, it currently costs 19,800 yen (£79) in Japan. An optional TV tuner is 12,800 yen (£51).



• *A puzzling moment in Pengo. Now on the Sega.*

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We would be pleased to receive enquiries from EXPERIENCED "full- function" software developers in connection with one or more software development contracts which we are seeking to place.

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Anchor Road
Aldridge
Walsall, West Midlands
England WS9 8PW

Tel: 0922 55852
Fax: 0922 743029

Contact: Diana Chambers (Administrator)
Peter Cook (Product Analyst)

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Gremlin Graphics, Carver House, 2-4 Carver Street, Sheffield, South Yorkshire. S1 4FS. Telephone 0742 753 423.

* The Ferrari bit isn't strictly true. It isn't even slightly true. Actually, it's a lie. Sorry about the duff design, but we concentrate on quality games, not adverts.

Tim Smith's CENT

Write to 30 Monmouth Street, Bath BA1 2BW (if you dare)

OPENING TIME

Hello everyone, the name is St John-Sprout, Tarquin St John-Sprout and I'm standing in for Mr Smith. Righty-ho then chums. It's off we go with a will and a way and a hangover the size of Phobos (that's one of Mars' moons you know).

We here at *New Computer Express* have been celebrating two major events. The first is the fact that the office has finally received a working air conditioning system (a fan on the ceiling just like the one from *Apocalypse Now*) and secondly that Mr Smith has been away for well over a week (*I'd rather have him here than you anyday – sub*). We did receive the following communication from him.

"Dear All,

The Express New York office screwed up badly this time. They have put me up in some roach motel, on some obscure sub-highway, just outside of a hamlet which might as well be called Boondocksville. Not only that, but the NeXT portable was stolen by a cop! He thought it was some strange spying device. How was I to know that I was driving through an airbase? Heads will roll, blood will spill. Thank God for my Gamegear!"

There you have it, and it doesn't look like he's going to be back for some time. Hurrah!

Back here we've been having heaps of fun with all the Macs which have decided to go on strike. It appears that the temperature change caused by the onset of winter and the heavy use of the fans has caused their processors to freeze over. This began manifesting itself with Postscript error messages. The Macs wouldn't even notice the LaserWriters. We are now at the point whereby they have rejected their own mice and are sitting on the desks blinking ominously and occasionally closing down for the hell of it. I never liked them anyway so I'm jolly chuffed that we've taken to writing everything with PCWs.

Lovely, anyway why don't you read the rest of ~~The~~ MY Centrefold?

Letter Spray

Want to see your name in print? Then write to Centrefold. This week's replies by Tarquin St John Sprout

This is fast becoming one of the more popular areas of The Centrefold... even more so since Mr Smith went away. Letter Spray offers a happy meeting place, free of invective, aggression and silliness. If you would like to have your name mentioned write in with an observation or even a complaint.

Wotcha Tim (or whoever's subbing for him), me old donkey's scrotum how are you doing? Excuse me for pointing this out, but surely Anonymous didn't mean the 5.35 inch disk typo in ish 96 pg56, doesn't that amount to a spelling mistake? Didn't anyone out there notice that the picture of the person posing as a tubby hacker was mirrored? I could be wrong, if I am then may I be spanked most ferociouisly by Annabel Giles, but either the picture is mirrored or he is using a left handed keyboard. I demand to know which error anonymous meant, let him write forth and clear up the confusion.

May a rather large African bull elephant fall helplessly in love with your washing machine.

The Android, Rhyl.

Dear Android,

Your wish is our command...

Sir,

I reply to your answer to my query about Yolanda you failed to tell me what was happening.

Re the error on page 56 issue 96, in case nobody else takes the time to write and let you know, the error was in the negative, if you use a mirror it will be plain to see that the picture at the bottom right hand corner was reversed. I thought this type of error could make a good type of competition game. As I am an OAP, pedanticity is part of my nature and it is too late to change that now.

Yours R E Treadwell

Dear RE,

I didn't know that old age automatically lead to pedantry. Thank you for informing me of the fact. Mr Smith was under great deal of pressure from ex-wives, angry Unix users and a local PCW-using priest when he replied to your letter. We have been reliably informed that the Yolanda competition is now in hand and that you should be receiving your copy ASAP. Thank you very much for writing and please continue reading the magazine. (What a very pleasant gentleman.) (Hey! You're not supposed to write your own sub's comments – angry sub)

Dear Mr Tim Smith,

So far I'm enjoying the new Centrefold and I'd like to nominate it for the Best Two or Three Somewhere Approaching the Centre of Britain's Best Selling Weekly All-Format Magazine Award, as I'm sure you deserve it. I reckon that the old back page articles were better – like Gooseberry Fool and How to make a cup of tea.

The following should really be sent to the more serious Express Mail, but I can't afford another stamp. Listen, I own an ST right and I was a bit dischuffed about all the full page articles on Amiga stuff. Now ST owners have their revenge, Whole Wired World filled almost entirely with ST-related news. A bit biased surely? I reckon about one more week should do it, then how about *NCE* getting back to its usual unbiased self? I hope you'll do a complete review of the new MSX 3 when it comes out.

Tatty-bye then, Steve Sharples

Dear Steve,

I'm afraid that the articles which you mention were before my time. However, I did go back and read them and you certainly have a point in what you say.

Frankly, and while Mr Smith is away, I find him a tad coarse, a mite gauche, very common and, between you and I, he is rather strange in his plebian habits. I feel that The Centrefold should hold some kind of intellectual sub-text relating to the metalanguage evolving around the computer industry. Essentially these pages should evoke a preter-post-modern ethos reflecting new steps in microchippery.

As for the bias which you so rightly mention. It is obvious that you are man of some erudition, observation and perspicacity, yes the bias will pass from the body of the magazine. Thank you for your time. (Smithee will be turning in his grave – sub)

Dear Timbo,

Just thought I'd drop you a line to tell you what's been going on from inside 'The Company'.

Rumours of a new portable – basically a new version of an old machine – have been shelved because the Christmas run-up means concentrating on 'the console' and the games machines.

All hell is breaking out with few major league sackings having taken place due to the non-appearance of one of the planned PCs. That's about it, more news as soon as I can get it.

Yours, DP

Dear DP,

I found this letter on the desk and it means nothing to me. I hope you don't mind me publishing it. If you could write in again and tell me which company you are referring to I would be most grateful.

THE TOSH TEN

This week we have had a Tosh Ten sent into us by Toby Kenneth Smith of Tilehurst, Reading. It's ten things your relatives say to you as an excuse for not buying you a computer for Christmas.

1) "I thought you were the sporting type" (they bought you a pair of football socks)

2) "Oh, I thought it was a computer" (they bought you a Casio pocket calculator)

3) "I don't have any luck with the damned things" (they bought you a pink, nylon, elephant-ear collared shirt)

4) "Can't you use your brother/sister's" (they bought you a complete set of Dick Francis books)

5) "They all look so expensive from what I read" (they bought you a subscription to *Byte magazine*)

6) "The games all looked too violent." (They bought you a complete set of *My Little Pony* annuals)

7) "I didn't think the games were violent enough" (your Uncle in Broadmoor didn't send you anything again)

8) "What do you want with one of those when you've got a brain on your head?" (your pretentious Aunt Lucy gave you 14 MENSA tests)

9) "God, I thought you said Commuter" (they gave you a bank clerk called Percy from Ruislip)

10) "That'll do to get you started" (they bought you a joystick)

TREFOLD

A CENTREFOLD LITERARY SPECIAL

Many people have been aware of the link between computer users and the sale of science fiction literature. Here we give you potted biographies of some of the sci-fi geniuses.

Kilgore Trout: Trout is one the foremost sci-fi writers not to have written about computers. He has over 2,000 works to his name. Try getting hold *Venus in a Half Shell*.

Isaac Asimov: Asimov is known and revered by spotty people world wide for his writings, lectures and for the disconnected sentences which he burbles in his sleep. The foundation series is probably the bulkiest collection of sci-fi ever written. Isaac Asimov is 102 years old and hardly mentions computers at all.

Philip K Dick: Nearly ignored until Ridely Scott turned the epic novel *Do Androids Dream of Electric Sheep* in the epic film *Blade Runner*. It featured a very impressive computer which could show details of images in photographs taken round corners. Dick tries to stop people laughing at his own name by giving his books even more absurd ones.

Arthur C Clarke: Famous for creating HAL the bonkers micro from the legendarily obscure *2001: A Space Odessy*, Clarke lives in a strange world and spends ages telling everyone about it.

Douglas Adams: The new kid on the block. Adams is fascinated by computers (well Macs anyway). He is also fascinated by Kilgore Trout, try comparing *Venus in a Half Shell* with Adams' work.

There you have it. Hardly any of these people write about computers, but loads of computer users read their works. What is the connection and should computer users start reading more romance stories?

IT'S THE LETS SHOW SOME PICTURES WE HAVE BEEN SENT IN BIT

This little lot came in from a cove called Laurie McCullogh who works at Lorenzo's Domain in Helensborough.

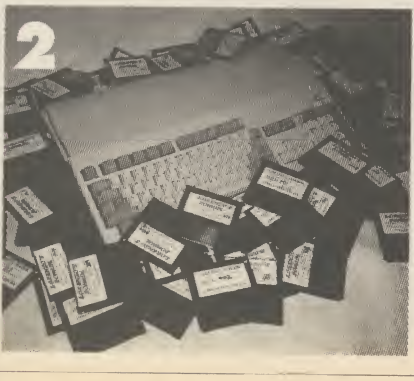
Laurie sent the pictures in to our advertising department with the message "Perhaps you could give them to somebody in editorial...." Well we could.

Mr Smith left instructions that the photographs be laid out in order and that a particularly astute reader will create a short tale about them. Spiffing!

By the way if you want to get in touch with Lorenzo's Domain for lots of lovely PD then call 0436 74737.

All you have to do is to give each picture a maximum 10 word caption, link it with the next in the series and make it amusing.

Once you've done this send your attempts to Lawks a Lummy It's the Domain Comp, and you might win a prize.



FROM THE ARCHIVE

I haven't been at *Express* for all that long (*seems like an eternity – sub*) so I find it jolly interesting to look back over past issues. Let's crack on, just what was going on in computerland one year ago this week?

WAR LADS DONE GOOD
NATO was just about to begin the biggest ever computer-based war simulation ever. Seven VAX mainframes were to be used to guide some 900,000 troops around the European countryside.

THIS IS THE BBC
A new version of BBC BASIC was due for release. It was said to be geared more towards graphics and games than its ancestors. It was also due to have enhanced music capabilities. A500 users were not to receive the souped-up language as it was targetted at the Archimedes.

BIG DEAL
A huge computer screen had been developed in the USA. The mega-screen measured 10 feet by seven and could be accessed in the same way as any normal computer screen.

THERE IS A BUUMMB IN YEUR RHEUUM
Inspector Clouseau and his colleagues in the French police force decided that it was about time the big corporations got the taste of some justice. Two large companies: Telediffusion and Banque Parisbas were raided and several allegedly pirated versions of some serious business software. Copies of Lotus, Microsoft and Ashton Tate software were found at the two companies – all of them unlicensed. Desperately unsporting don't you think?

SMELL IS BEAUTIFUL
Immortal stories are few and far between. Equisite writing is a rare thing, but here we have both. Headlined as Computer Smellchecker the story read as follows:

"Microchips are being used to develop the first artificial nose capable of sniffing out wiffy grub in your fridge. The computerised honker is being put together by scientists at Manchester University...." That, I feel, gives you a flavour of the story.

CHEAP AND POWERFUL
Fujitsu offered to install a mainframe costing many millions of yen for a mere half-penny. The system was to be put up in Hiroshima. The reason behind this was that Fujitsu was desperate for the kudos which such a system would afford them. However, after pressure from American and Japanese companies which were also tendering contracts, Fujitsu was forced to back down.

I WISH I'D SAID THAT

Every day of the week someone says or writes something which is patently stupid, wrong, mistimed or funny. Have you seen or read anything like that. If so send it to IWIST. Prizes are on offer.

"Unemployment has arrived in the microcomputer business. There are micro people who don't have jobs" – *Guy Kewney making a point, that's a point being made by Guy Kewney.... one of Guy Kewney's points.*

"Yet another revolutionary product from Hi-Grade" – Hi-Grade computers inc.
"With its revolutionary, ultra-slim, space saving technology Base-Station 286 is a landmark in computer-design" – *Opus technology.*

"Multi-sys is set to revolutionise the computer market" – *Total Computer Logic ad.*

THE OUT OF TOWN TOP TEN

Every week we go out to the forefront of computing, to the people and find out what's lighting everyones flame. This week we sent MC DG (Dave Golder) to visit the potteries.

Apart from nice plates, what has Staffordshire got to offer? Pretty tough one that, but here's one answer – the Miles Better Software Shop in Cannock. Managed by Wayne Abbott, the shop can be found at 219-221 Cannock Road, Chadsmoor, Cannock and can be contacted on 0543 466577. So cue spangly music and a man with a deep voice reading out the numbers as we run down this week's top tens...

TOP 10 16-BIT

1) *F19 Stealth Fighter* : swooping into the top spot.

2) *Operation Stealth* : Bond-style graphic adventure.

3) *Kick Off 2* : possibly the ultimate footie game?

4) *Turrican* : jolly mayhem, silly plot.

5) *Captive* : new in and destined to be big.

6) *Supremacy* : tactical intergalactic domination.

7) *Shadow of the Beast* : a favourite country-wide.

8) *Platinum Compilation* : four game EP.

9) *Midnight Resistance*: future thrills in arcade conversion.

10)*Shadow Warriors* : doing better with half the bits.

TOP 10 8-BIT

1) *Shadow Warriors* : see what we mean?

2) *Subbuteo* : footie action.

3) *Man Untd*: More specialised footie action.

4) *Ghouls and Ghosts*: medieval platfoms and ladders.

5) *Rainbow Islands* : cute and soppy, but difficult.

6) *Double Dragon*: Ninja kick-em-up.

7) *Robocop* : benefitting from the film's success.

8) *TNT Compilation*: more readers' digest gaming.

9) *Kick Off 2* : footie action dominates the chart

10) *Escape from the Planet of the Monsters* : 50s sci-fi fun.

DESPATCHES

Every week we bring you news from around the globe written by one of our team of highly trained expert foreign correspondents. This week it's Clare Brompton, the girlfriend of my old school chum Denzil (I've got an Amiga) Strutthers-Blane. Clare is writing from a yacht near the Antibes.

Tarquers,

Life is just so jolly at the moment. We've been at sea for two weeks now and Daddy just will not leave his Compac System Pro 33 alone. It's got a new Super-VGA screen [2048x1024], 16 megs of memory, CDROM drives, 24-bit colour and whole heaps of other stuff which is just too wild.

What this means is that Denzil and I have the "Ocean Spray" to ourself. Den' managed to smuggle his Amiga A500 on board and we've been playing non-stop *Captive*. It's too whizzy, it really is!

Daddy tells me that the next big thing in the City will be handheld gilts dealing machines in the same mould as the Atari Lynx, the Nintendo Gameboy or even the Sega Gamegear. His firm will be investing in one 'very major' corporation in the near future in order to help in R&D for this project. Sounds hoopy doesn't it sweety?

The idea is that one can be in one's car, on the train or even in the Antibes like we are and one can still make heaps of money. Of course one will have to pay out rental charges for the system and the network, which is all the more loot for Pops. The upside for the user is a handy little wigit on it means that one can launder bonds with next to no fear of detection by the authorities.

Daddy and Alan Sugar still are not talking since Pops made mention of his belief that Mr Sugar was, well I can't repeat it in print darling can I? He has been talking to that nice man at Konishiwa in Japan. The boss man there has finally agreed that the company is going to buy Sunderland next year and set up a huge chip making factory. Think how happy all the paupers will be.That's it for now Tarquie, love to the readers, send the money to some needy charity such as Ex-Comprehensive School Children Against the Bomb and I'll see you at the Curragh next meeting. p.s. When are you going to get a decent job?

TALE SPIN

Stories are the elements which solidify cultures, or so said my Middle English lecturer at University. As computing grows, more legends and myths grow up with it.

Have you heard any tales of the weird and wonderful? If so send them to Tale Spin. If they're true, even better but remember that the telling of the tale is nearly as important as the tale itself (*well you'll never make it to the news desk will you – sub*)

VIVA ZAPATA

Peru 1982. Bandits robbed a train running across country and carrying what they thought was a load of mail including cheques, money orders and bonds. After a skirmish and one fatal injury the scoundrels broke into the carriage where they found boxes of PC and other computer equipment which they proceeded to trash in disgust.

PUT THE STRAIN ON THE TRAIN

The recent Atari train show at Bristol Temple Meads railway station was, in the words of one Atari spokesman ".a huge success".

Certainly the public turned up in droves. In fact there were so many of them trying to cram into six train carriages with about four feet of space to spare for actual movement, that the fat controller ordered that people be refused entrance for a while as the thing had turned into a fire hazard.

Express' little sister magazine *ST Format* was there in force. In fact Atari was gracious enough to let the *Format* crew act as receptionists – the mega-computer corp hadn't bothered with any of their own. Actually they hadn't bothered with much. The postering for the fiesta consisted of A5 two colour (black on yellow) leaflets stuck to a board.

Finally, and to add the general feeling of, well, tat, the train itself was the old BR exhibition model and not the 125 which is used in the advertising. Still, it can only get better and in the interests of balanced journalism it must be said that it looked like a steaming success.

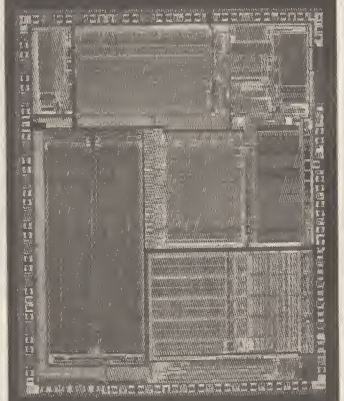
Also in the same vein Centrefold would like to refute the statement made by one Atari spokesman after he had commented that the show was a success, "At least you won't have to make anything up this time". Frankly my dear, who could be bothered to?

THE CHARTS

This week, and after waiting for far too long, you get to have a look at my top ten pieces of software. I have been involved with computers for many years now, so this chart should really impress you lot shouldn't it? It's got some old classics. (I say, these three pages are simply easy to write are they not? oh sub this bit out would you darling) *(Don't you darling me – sub)*

1) *Fiendish Freddie's Big Top 'O Fun* (craaazy name for a craaazy game).
2) *Cadaver* (a game all about a dead person, strange).
3) *Days of Thunder* (a weather simulator it's my fave).
4) *Hammerfist* (boxing is a noble sport, two individuals battering it out, great!)
5) *Stunt Car Racer* (Banger racing on the CPC is fun isn't it?)
6) *The Spy Who Loved Me* (I love all those Harrison Ford films).
7) *Subbuteo* (do you remember the board game? Pressing their little heads so that they kicked?)
8) *Chess Champion 2175* (A must for all upcoming Karpovovs surely).
9) *F-19 Stealth Fighter* (nin-ja, nin-nin-nin-ja! Great fun).
10) *Harley Davidson* (He's my favourite detective, better than Philip Marlow or Sam Spade).
(You really don't have the faintest idea what you're talking about do you? – sub)

CAPTION FULL STRENGTH



What is this? Is it the floor plan from a desirable piece of property such as you might find in a Populous city? Is it a piece of modern art?

We need to know. Send your ideas to Caption Full Strength and please remember to mention which issue you're referring to.

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SAM Scart cables for Microvitec cub monitor	£9.99
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Spectrum 48K power supplies	£9.99
Spectrum 128K power supplies	£14.99
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All prices include VAT - Postage Printers/Computers £5.00. Postage all other products £1.00

MGT DISC DRIVES AND PLUS 'D' INTERFACES REPAIRED.
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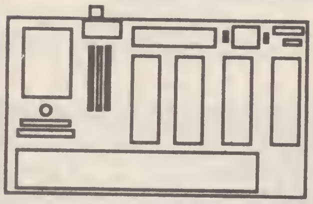

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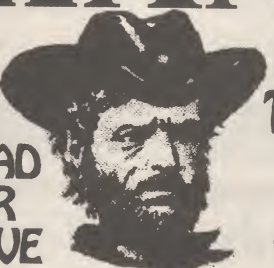

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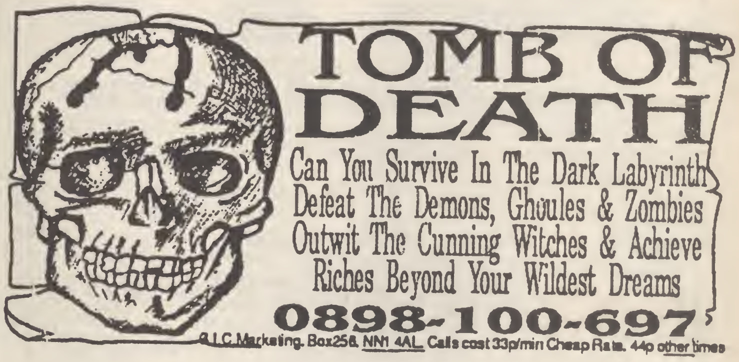
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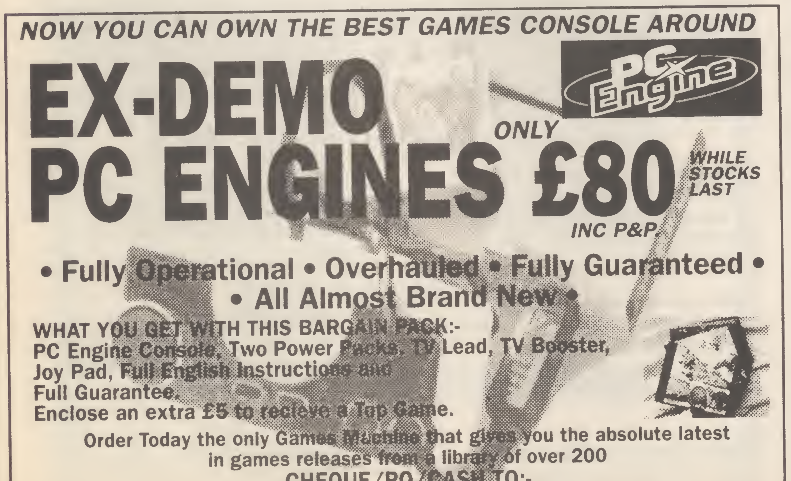

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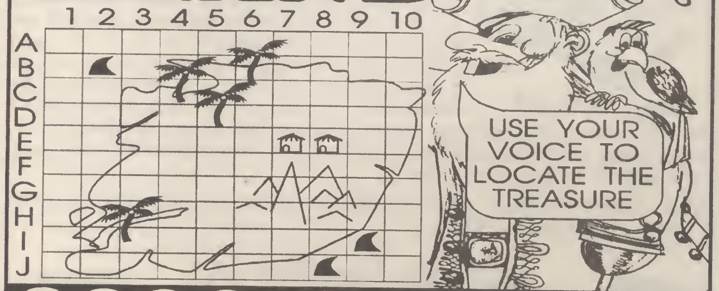
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LANGUAGE BARRIERS

In this first week of the new Express column on programming, Mary Branscombe helps you chose a language and plan your approach.

Programming can be viewed like any other act of creation or design. The problem must be analysed, so that you know what you are trying to do. A solution must be devised, and then tested and modified or improved as necessary. The process forms a cycle of specification, coding and debugging; debugging will usually take up a considerable portion of the time spent on any program, although this can be reduced by careful planning and a systematic approach to tackling bugs.

Analysing the problem will involve basic decisions, such as identifying the data that will be used by the program and the results that are required. An algorithm for producing the results is needed as well as a language in which to implement the algorithm.

A selection of languages will be covered later in the series and we will look at the applications for which they are best suited. You can write image-processing programs in BASIC, but they will not be as efficient or effective as similar programs written in C or Pascal. More memory and processing power may be required to process the same data and performance may become unacceptable if the wrong language is chosen.

Efficiency is not the only consideration; sorting routines written in asssembly language will be efficient, but they may be difficult and time-consuming to develop. Prototyping an application in a language that is easy to use and writing the final code in a language that is better suited to the application, but harder to program, can simplify and speed up development. Whether the language is compiled or interpreted may also affect its suitability (see box).

Whatever the language chosen, it is important to plan the program carefully; this may seem tedious, but it can save a considerable time and effort later, when you try to work around the deficiencies of your program. The principles to be applied are the same whatever the language chosen. It is often best to begin a program on paper rather than on screen. Trace the path to be followed by the input data, beginning with any loops or procedures required and simply list these; details can be filled in later, when the actual procedures are written. This approach is known as top-down programming or step-wise refinement and is suitable when implementing a known algorithm. On the other hand, if you know the low-level procedures that must be applied to the data, but not the position that these will occupy within the program, then you can work bottom-up, writing the low-level procedures and then expanding the program as required. If necessary, the prototype produced in this way can then be re-implemented top-down. Whichever method is followed, planning the program before writing it will mean you spend less time changing variables and procedures to be consistent.

Following a consistent scheme of indentation will make the program easier to follow for debugging, or when you come back to the code six months later; some modern languages may provide this automatically. Similarly, if the language used allows you to use self-explanatory variable names then things will be easier if you do so, although excessively long names can be as problematic as single letters.

Names such as:

ValueIn

will make your listings easier to read than:

ValuePassedFromFirstProcedure

if the procedure has several variables.

While careful planning can be enough for small programs, a methodology such as structured or object-oriented programming may be required for programs of even medium complexity. These involve more planning and analysis and affect the style of the code.

The concept of style in computer languages has less to do with the niceties of construction and more to do with efficiency and practicality. Language standards are defined by national and international bodies such as ANSI (the American National Standards Institute), in consultation with leading industry programmers, but alternative standards and dialects can arise. The features included in languages and the ways in which these can be used will rarely be limited to those devised by the original writers of the languages; the constructs of Turbo Pascal are often dissimilar to those in Nicklaus Wirth's original specification.

This evolutionary development means that the simplest or most efficient ways to use the constructs of a language will be discovered by the programming community as they use the language. The methodology that offers the best results will be considered good style, when it is perhaps more a question of necessity if good programs are to be written.

Planning, structure, style and methodology may seem restrictive and time-wasting when you want to get started on a program. Saying that they are time well spent may not mean much until you have spent five hours debugging a program and an hour rewriting it, because you didn't bother to plan the structure before you started. ■

COMPILED VERSUS INTERPRETED LANGUAGES

Whatever the language in which a program is written, it is executed internally as machine code, so that programs must be translated into machine code before they can be run. Interpreters translate the program one line at a time, while compilers translate the entire program into machine code at once.

These two approaches have their respective advantages and disadvantages. Programs written in interpreted languages generally run more slowly because of the delays caused by the translation. The programs only run with the interpreter, so that it is impossible to create stand-alone applications that can be used without the language. However, program development can be faster and easier as execution can be stopped at any point and the program corrected or modified, without the need to go through the entire cycle of editing, linkage and compilation again.

Working in compiled languages may be tedious because the program is created in an editor and compiled separately by the compiler. If more than one program is to be compiled into a suite of programs, then linking of the compiled modules will be necessary, so that all modules of code are available at run-time; some language implementations offer automatic linkage. Once the code has been compiled, it can be run and checked; any changes must be made in the editor and the code recompiled and run again. Incremental compilation, a recent development, speeds up this process, by only recompiling sections that have been changed. Integrated editors and compilers also make the process easier and faster.

The advantage of compilation is the speed of the compiled code (typically 10 to 100 times faster than interpreted code) and the ability to distribute stand-alone interpretations not requiring the original language. Some languages may also offer both interpreters and compilers, so that the application can be developed with the advantages of the interpreter and then compiled.

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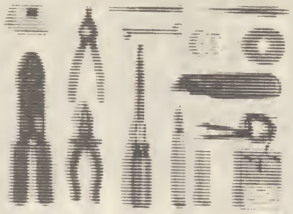


Some important jobs won't fill a full page no matter how many words you pour into them. This week Keith Pomfret fills his page by showing you how to reset your PC in hardware and reduce your on-line phone bill to a minium.

There's a time and a place for everything and this week's Circuit City is the time and the place for a couple of jobs that don't warrant a full page project, but deserve covering nonetheless.

PC RESET BUTTON

Some PCs come with a useful button that allows a full hard reset without switching off the computer. The technology involved in this device is next to none and even the most technically incompetent can make it work with a little application. To build your own reset button you need the following

1) Two pieces of wire
2) A sprung momentary contact switch
3) Schematic plans of your PC's motherboard.
4) Solder and Iron
5) A drill
6) Patience

Take the schematic of your machine's main board and locate the reset line. This should manifest itself on a connector somewhere on the board. Also find a connection that corresponds to Ground on the board. If you were to connect the reset line to ground by touching the bare ends of the wire on reset and ground, the machine would go through a hard reset. The machine would restart as if it had been turned off at the mains. This can be useful if you need to reset from a program that disables the Control-Alt-Delete reset sequence. The advantage of a reset button is that a simple push switch that can be mounted in a convenient place can do the reset without you fumbling around for hidden switches, or powering down the whole machine, power supply and all.

To make the permanent switch, first take a drill and invalidating any warranty that remains, drill a hole to take the switch. A simple surface-mounted spring-loaded plunger switch will do the job. It must be a momentary switch as the making of the circuit for a fraction of a second is enough to cause the reset.

One pole of the switch should be soldered to a piece of wire and the other end should be soldered to the reset connection on the board. The other pole of the switch should be soldered to the other wire which should in turn be soldered to ground on the board. The operation of this simple switch will cause the desired reset.

Although it is a simple job and doesn't require MENSA membership, it is important to have a schematic of your motherboard and not attempt the job on guesswork alone. If tackled professionally, it is a simple, useful upgrade. If hurried or done without appropriate documentation to hand, you could kill your expensive PC.

EFFICIENCY ON-LINE

You have the computer, the software and the modem. A list of BBS (Bulletin Boards) is to hand and it is time to leave messages, files and documents for all those people who said that it's easier on line.

Before you reach for the autodialer, there are a few hints and tips designed to give you an easier life (and a smaller phone bill).

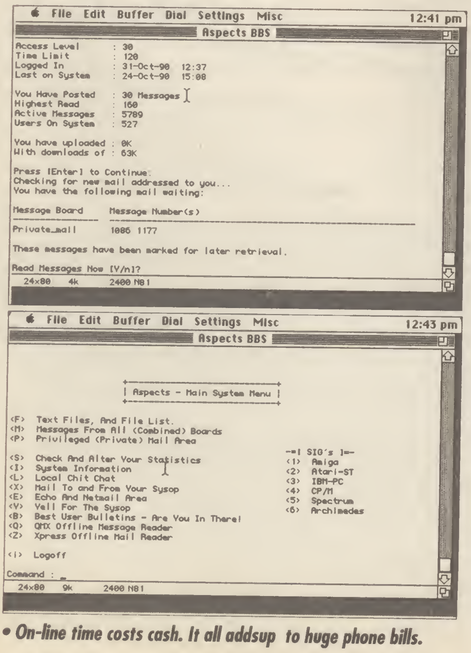
OFF-LINE CHECKLIST

Here is a list of things to think about before you start an on-line session. Follow this advice and you'll save pounds in phone bills and learn to be efficient on-line.

There's nothing worse than ringing a BBS that is constantly engaged. The more efficient the users become, the more likely you are to get through at the first attempt. Now the list.

- **Start with simple things like time.** What time of day is it? Is it cheaper at another time of day? Why log on? Is there an alternative method you could use? Will the consignee get the mail any quicker than by first class mail?
- **What is to be sent?** Is it sensitive? Should it be left on an open system? If it is long distance, is there a Net Mail system that can pass it on? What speed is the log-on? Is there an alternative that is accessible to the consignee and a faster baud rate?
- **All time on-line costs cash.** If it's a regular mail/file swap, is it worth furnishing the consignee with some form of compress/uncompress file utility? Will this be the only file sent or will more follow? Is it worth archiving/librarying and sending a load together in compressed form? If the data is sensitive, some sort of encryption may be useful. Preparing the messages earlier off-line can save large amounts of time and on-line bills.
- **If there is documentation** for the on-line service that you are using, keep it to hand and have a quick check list. Get on, upload, get off. It is all too easy to dial up, go on-line and then sit thinking about what message you must send.
- **Auto dial numbers,** but don't leave passwords in auto dial up files. Automate as much of the procedure as possible.

If there's any one piece of advice to a Comms user it must be: "Do all your thinking preparing and reading off-line." Follow that advice and you may keep your phone bills away from Bailiff status. ■



```
Access Level       : 30
Time Limit         : 120
Logged In          : 31-Oct-90  12:37
Last on System     : 24-Oct-90  15:08

You Have Posted    : 30 Messages
Highest Read       : 160
Active Messages    : 5789
Users On System    : 527

You have uploaded : 0K
With downloads of : 63K

Press [Enter] to Continue:
Checking for new mail addressed to you...
You have the following mail waiting:

Message Board      Message Number(s)
---------------    --------------------------------------------
Private_mail       1086 1177

These messages have been marked for later retrieval.

Read Messages Now [Y/n]?
   24x80   4k      2400 N81
```

```
                    +----------------------------+
                    | Aspects - Main System Menu |
                    +----------------------------+

<F>  Text Files, And File List.
<M>  Messages From All (Combined) Boards
<P>  Privileged (Private) Mail Area
                                                  -=[ SIG's ]=-
<S>  Check And Alter Your Statistics              <1>  Amiga
<I>  System Information                           <2>  Atari-ST
<L>  Local Chit Chat                              <3>  IBM-PC
<X>  Mail To and From Your Sysop                  <4>  CP/M
<E>  Echo And Netmail Area                        <5>  Spectrum
<V>  Yell For The Sysop                           <6>  Archimedes
<B>  Best User Bulletins - Are You In There!
<Q>  QMX Offline Message Reader
<Z>  Xpress Offline Mail Reader

<!>  Logoff

Command : _
   24x80   9k      2400 N81
```

• *On-line time costs cash. It all addsup to huge phone bills.*

TWO SCENARIOS

MR PRATT

Look up phone number. It's in Canada, but it's quicker than the mail. Dial the number and log on. 300 Baud may not be superfast, but at least you're on line. Fumble around for a couple of minutes chasing through menus for the elusive message and file upload area. After ten minutes, you find the area that you want.

Sit back and think about the message that you need to send. It's a good friend and colleague so it will be a good thousand words or so.

Type laboriously for a couple of hours using the difficult on-line edit functions. After this, you can work back through the menu structure to the main menu and log off. As you log off, you're prompted for a message for the Sysop.

He's a nice chap, so spend another half an hour typing telling him how good his BBS is and you can sit back and wait for a phone bill guaranteed to make the *Guinness Book of Records*.

MR COMMS

Decide who you need to message and which is the most efficient way of sending it. If they're abroad you can probably use one of the BBS that uses Net or Echo mail to pass messages on. Pick a BBS that has a fast Baud Rate and prepare your message or files earlier. If the recipient can handle compressed and archived files, more's the better. Make sure that you've a checklist of commands and BBS protocols so that you can log on and go straight to the areas that you need. If there's anyone else on the proposed BBS that would benefit from a message (including the Sysop) – prepare these off-line as well.

Consult your checklist for the BBS protocols, dial up and log on with speed. Using your checklist, move to the file/mail upload area, select the most efficient transfer that both systems can handle and upload your file. Any other messages/files can be uploaded in this way too. After uploading, check for incoming messages and files. Download them in the same way and log off.

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BBC MICRO - BEEBUG, 117 Hatfield Road, St Albans, Herts AL1 4JS. 0727 40303.

C LANGUAGE - Martin Houston CUG (UK) Houston Technology Ltd, 14 Arden Oak Rd, Sheldon Birmingham BS26 3LX 021-722 3168

CAMBRIDGE Z88 - Roy Woodward, Z88 Owners' Club, 68 Wellington St, Long Eaton, Nottingham NG10 4NG

CD ROM - UK CD-ROM User Group, High Wings, Salem, Treforys, Abertawe SA6 1XX 0792 844 370

CHOICE on-line help. Telephone: 0308 23224 7-9 AM only for now.

CHURCH ADMINISTRATION - Rev Stoker Wilson, Church Computer Usr Gp, St John's Vicarage, Greenside, Ryton, Tyne & Wear NE40 4AA. 091-413 8281

COBOL LANGUAGE - Allen Reavie 22 Mourneview St, Portadown, Northern Ireland. BT62 3AW,

COMPUNET - Independent Compunet Club, 148 Furzehill road, Boreham Wood Herts. WD6 2DX

DATAEASE - Dataease User Group Hi-tech House, 10 Blackfriars St, Norwich NR3 1SF 0603 762 806

ECONET - Michael Ryan, Econet User Gp, Balkeerie Cottage, Eassie by Forfar, Angus DD8 1SR

ENET (like econet) - T K Boyd, Enet (Amcom) User Gp, Seaford Cottage, Petworth, West Sussex GU28 0NB

COLECO ADAM - Keith Mamer, UKAS 33 Homer Road, Croydon CXR0 7SB

COMMODORE ALL MICROS - Jack Cohen, ICPUG 30 Brancaster Road, Newbury Park, Ilford IG2 7EP 081-346 0050 home: 081 579 1229 day.

COMMODORE AMIGA - UK Amiga Uders Group, 144 Charles Street, Leicester LE2 00D .0533 510066 voice; 0533 517615

CLARGY/MEDICAL EDUCATN - Mr T Jones, FREE-ED Shareware/PD 85 Stoke road, Taunton, Somerset TA1 3EL. 0823 321 481

COMMUNITY COMPUTING - Community Computing Network 2nd Floor, 35 Pink Lane, Newcastle, NE1 5DW 091-261 0317

COMPUCORP. Compucorp University users group c/o Compucorp, Cunningham House, Westfield Lan, Kenton, Middx

COMPUNET - Independent Compunet Club, 148 Furzehill road, Boreham Wood Herts. WD6 2DX

CONFERENCING - Compulink, suite 2, The Scantuary, 23 Oakhill Grove, Surbiton, Surrey KT6 6DU Voice 081-390 8446 CIX BBS 081-399 5252

CPM & MSDOS USERS - Nicholas Higgins CPM & MSDOS Users Group, 42 Birkbeck Road, Wimbeldon, London SW19 9NZ. 081-543 0824

CRYPTOGRAPHY & CODES - Mike Barlow, American Cryptogram Association 5052 Chestnut Avenue Pierrefonds, Quebec HBZ 2A8 Canada

DISABLED - Jeff Hughes, Special Needs User Gp, 39 Eccleston Gardens, St Helens WA10 3BJ 0744 24608

DRAGON - Paul Grade, National Dragon Users Group, 6 Navarino Road, Worthing, Sussex 0903 207585.

ECONET - Michael Ryan, Econet User Gp, Balkeerie Cottage, Eassie by Forfar, Angus DD8 1SR

EDUCATION - Charles Shannon, TECUG, 35 Wellington St, Gravesend, Kent DA12 1JG. 0474 567 931

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ENTERPRISE - Tim Box, Independent Enterprise User Group, 50 Holdenhurst Avenue, Finchley, London N12 0HX. 081-346 8032

FLIGHT SIMULATOR (MSDOS) - Alan Hawkins, SIMFLY Club 2 Henley Manor Raincliffe Ave, Scarborough YO12 5BU

FORTH Language - Douglas Neale, FIG (Forth Interest Group) UK, 58 Woodland Way, Morden, Surrey SM4 4DS.

FRACTALS/CHAOS THEORY - Andy Lunness, 69 Bronte Avenue, Bury, Lancs BL9 9RN. 061-764 6469

GENEALOGISTS - Computer Group, Society of Genealogists, 14 Charterhouse Buildings, London EC1M 7BA. 071-251 8799.

GENERAL HOME MICROS - Steve Winter, Chic Computer Club, PO BOX 121, Gerrards Cross, Bucks SL9 9JP 0753 884473

GUAGE - Martin Houston CUG (UK) Houston Technology Ltd, 14 Arden Oak Rd, Sheldon Birmingham BS26 3LX 021-722 3168

HITACHI MBE 16002 PC - Bruce Ainge HICUPS 16 Nine Acres Road, Cuxton, Kent ME2 1EL. 0634 715759

HOUSING ASSOCIATIONS - Caroline Maries, Micro Users Ltd, Beaver Housing society, 23 Lewisham High Street, London SE13 5AF. 081-318 1126

HEALTH WORKERS - Sue Mckendrick, Healthlink, 164 Windsor Rd, Ashton-in-Makerfield, Wigan WN4 9ES. Voice: 0942 712 385

IBM PC - The IBM PC User Group PO BOX 360 Harrow HA1 4LQ.081-863 1191 BBS 081-863 6646

JUPITER ACE - John Charter, Jupiter Ace Forth User Group, 17 Spring Wood Close, Dunston, Chesterfield S41 8BS. 0246 237555 SAE

FIND YOUR LOCAL CLUB - John Dale, british Association of Computer Clubs, Banc y rhosyn, 14 Bron Y Glyn, Bronwydd Arms, Carmarthen SA33 6JB. 0267 230 771

LOCAL AUTHORITIES - Local Authority Micro User Gp, John New, Borough Engineer's Dept, Municipal Offices, North Quay, Weymouth, Dorset DT4 8TA. 0305 785101 x272

LOTUS PRODUCTS - Lotus User Group, 79-80 Peascod St, Windsor, Berks SL4 1DH. 0753 841686

LYNX - R B Jones, Lynx User Group, 39 Ashton Close, Needingworth, St Ives, Cambs

LYNX DISK USER GROUP. J Koushappas. 172 Pasteur Gdns, London N18. Tel: 081 807 3859

MEMOTECH - Phil Eyres - Memotech Owners Club, 23 Denmead Road, Harefield, Southampton SO2 5GS .0703 585106

MICROSOFT WORD - Lesley Port, Microsoft Word User Group, Folly House, Madeira Walk, Bachelors Acre, Windsor, Berks SL4 1EU. 0753 831001

MOTOROLA 68xxx MICROS - Rick Applegate, 68 Microgroup, 8 Great Cob, Springfield, Chelmsford, Essex. BBS 081-316 7402

MSX SYSTEMS - Keith Neal, MSX Link, Austerby House, 80 Austerby, Bourne, Lincs PE10 9JL

NASCOM/80-BUS/CPM - Scorpio Systems, PO BOX 286, AYLESBURY, BUCKS HP22 6PU. 0296 624868

NEWBRAIN - Ron Bury, NewBrain Support Grp, 70 Cranberry Lane, Darwen, Lancs BB3 2HL 0254 771891

NIMBUS/RM AX/VX - Dr Martin Hatfield NIMBUG, 13 Belle Vue Ave, Gosforth, Newcastle-upon-Tyne NE3 1AH 091-285 7806

NORTHSTAR - Brian Haines, North Star & CP/M Grp, 9a Sharpleshall St, London NW1 8YN.

PHILOSOPHY APPLE - G Haines, Chinese Room Club, 43 Cornwallis Gdns, Hastings, East Sussex TN34 1LX. 0424 714 102

PICK OPERATING SYSTEM - Hugh Kellt, UK Pick Users Assocn, PO BOX 907, London N10 2SB. 081-462 4666

OS/2 - Karen Burns, OS/2 User Group, Cecily Hill Castle, Cirencester, Glos LG7 2EF 0285 655 888

OSBORNE/CPM/MSDOS - Jeremy Browne BOOG, 102a Aldershot Road, Fleet, Hants GU13 9NY. 0252 621745 voice, 626233 BBS

PC SOFTWARE - PC Serve, 1147 Greenford Rd, Greenford, Middx UB6 ODP 081-864 2611, BBS 081-864 2633

PICK OPERATING SYSTEM - Hugh Kellt, UK Pick Users Assocn, PO BOX 907, London N10 2SB. 081-462 4666

PRESTEL - Andy Leeder, ClubSpot 810, Church Farm, Stratton St Michael, Norwich,NRQ15 2QB

PSION ORGANISER - Mike O'Regan, IPSO, 130 Stapleford Ln, Beeston, Nottingham NG9 6GB. 0602 735482

RESEARCH MACHINES - Steve Rochford RM National User Group, George Stephenson High School, Southgate, Killingworth, Newcastle NE12 0SA. 091-268 2002

REVELATION (PICK) - Malcolm Frame UK Revelation User Gp, 136 St Albans Road, Watford WD2 4AE. 0923 35515

R:BASE - Mrs Tansy Beal, R:Base User Group c/o Room A2044 BBC Woodlands, 80 Woods Lane, London,W12 0TT. 081-576 7187

SANYO MBC-550 - M H Syed, Wistaria, 53 Acacia Grove, New Malden, Surrey KT3 3BP. 081-942 9009

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SCIENTIFIC PC USERS - Tim Bunning, SPCUG PO BOX 17, Retford, Notts DN22 6BQ 0777 709 009

SCHNEIDER EURO PC - Alex Kefford, SEPUG, 11 Crabbet Road, Three Bridges, Crawley, West Susex RH10 1NF

SHARP - Andrew Ferguson, Sharp User Go, 11 Harcourt Close, Henley on Thames, Oxon RG9 1UZ. 0491 574850

SIRIUS - Simon Sheppard, ISSUE PO BOX 222, Brighton BN1 3BR.

SORD M-23 B Nicholson, Schlumberger Norge A/S Bjergstedveien, 4007 Stavanger, Norway. 474 657002.

SMART SYSTEMS USERS - Francis Barton, smart User Group, Basement Holy Rosary church, Louis Street, Chapeltown, Leeds LS7 4BP. 0532 629202

SUPERPROJECT - Geoff Groom, 3 Sunnymeade Ave, Carshalton Beeches, Surrey, SM5 4JA. 081-643 3336

TAS (DATABASE) - Neil Hegarty, TASUG C/O Solutions for You, 1st Floor, 2 Lytton Rd, New Barnet, Hertsm EN5 5BY. 081-441 1133, BBS 081-449 4171

TANDY/MS-DOS - Roger Storrs, NATGUG' Oakfield Ldge, Ram Hill, Coalpit Heath, Bristol BS12 2TY. 0454 772 920

TEXAS T199/4a - Peter Walker, T199/4a Usr Gp UK, 24 Bacons Drive, Cuffley, Potters Bar, Herts EN6 4DU. 0707 873778

TEXAS T199/4a - Peter Brooks, International TI User Group 96 Banbury road, Oxford OX2 6JT. 0865 510822

TRANSPUTER - Howard Oakley, Transputer User Group, Brooklands Lodge, Park View Close, Wroxall, Ventnor, Isle of Wight

UNIX USERS - UKUUG Secretariat Owles Hall, Buntingford, Herts, SG9 9PL. 0763 73039 /73255 (fax)

VENTURA PUBLISHING - VPU (Ventura Publisher User grp) Linda Liddell VPU c/o LLA Lound House, Forncett St Mary, Norfolk, NR16 1JP. 0508 41580

WORDPERFECT - Michael Norman, Wordperfect User Group (UK) Dove Barn, Manor Farm, Wootton Woodstock, Oxon, OX7 1DX 0993 812 670

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Micro Update	081-877 1529	V21/22/22b/23
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Microlog	0422 71921	V21/22/22b/23
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Midnight Caller	0633 279243	V21/22/22b/23
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Mininet 3	0642 672813	V21/22/22b/23
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My Little Phoney	0865 773277	V21/22/23
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North Yorks Qbbs	0423 868065	V22/22b?
Northern Lights	0768 773685	V22/22b
Norwich Onion Bbs	0603 423305	V21/22/22b/23
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Nova-net	0274 370760	V22
Odd-ball	081-679 2583	V21/22/22b/23
Open Access	081-427 3974	
Optix	0482 872294	V21/22/22b/23
Organic Garden	081-464 3305	V21/22/22b/23
Out Of The Blue	081-668 7667	V21/22/23
Owl Service	0532 605876	V21/23
P'S & Q'S Tel	051-236 3105	V21/22/22b/23
Pacific Lightning	0732 845338	V22/22b
Packet Bbs	081-547 1479	V21/22/2
Packet Place	0484 435620	V21/22/22b
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Pazaz Viewdata	0383 620259	V23v
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Pc Serve Storehouse	0494 728094	V21/22/22b/23
Pc-vax Opus	081-800-3549	V21/22/22b/23
Pcamiga Bbs	0602 735119	V22/22b
Peacenet West	0895 448998	V23v
Pecan Software Bbs	0272 248076	V21/22/22b
Penguin	0943 830820	V21/22/22b/23
Phantom	0226 340425	V21v/22v/23
Phoenix	0249 817704	Hst
Piston Popper	0424 853361	
Plug-ole	021-472 0256	V21/22/22b/23
Plus And Minus	0559 322766	V21/22/22b/23
Poacher	0476 62450	V21/22/22b/23
Polynet Bb	071-580 1690	V21/22/22b/23
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Sky-line	0603 742273	V21/23/23v
Skyline 1	0234 741691	Hst
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Software Source	0892 661149	V22/22b
Sounds Of Mercia	0203 682896	V21/22/22b/23
Sparx	0793 480287	V21/22/22b/23
Split Infinity	0342 712248	V23v
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Staines Bb	0784 465794	V21/22/22b/23
Starbase One	071-733 3992	V21/22/22b/23
Strange Brew!	081-665 5038	V22/22b
Stun User Network	061-429 9803	V21/22/22b/23
Summer Wine	0484 653234	Hst
Sunburn Inc.	021-449 5269	V21/23
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Swindon Newc Bb	0793 616683	V21/23
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Tabbs	0225 743797	V21/22/22b/23
Taecomm	0994 6709	V21/23
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Tharr Bbs	0234 261804	V22/22b
Third Wave Systems	071-585 3163	V21/23
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Transylvania	0274 621668	
Tranz-com Bbs	081-952 6273	V21/23
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Trinity Ii	0367 22764	V21/22/22b/23
Tug Ii	0905 775191	V21/22/22b/23
Twilight Zone	081-788 0884	V21/22/22b/23
Twilight Zone Ii	071-608 1485	Hst
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Uk Healthlink	0942 722984	V21/22/22b/23
Unisys Etoi Bbs	081-453 5739	V21/22/22b/23
Unit One	0285 713688	V21/22/22b
V.i.t.a.s.	021-749 5860	V21/23
Valente'S Bbs	071-978 2078	Hst
Vector System	0329 45824	Hst
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Village	081-464 2516	V21/22/22b/23
Village Fayre	081-841 5971 Rb	V23
Voyager Bbs	061-725 9580	V21/22/22b/23
White Lightning	0635 37259	V22/22b
Whitehall Pent	071-930 3903	V21/22/22b/23
Wild Imaginings	091-263 4303	V21/22/22b/23
Winchester Remote	0962 69322	V21/22/22b/23
Wolverhampton Ros	0902 745337	V21/22/22b/23
Womble Base	081-979 9606 Rb	V23
Woodgreen Bbs	081-889 5624	V21/23
Yugo Bbs	0734 753648	V21/22/22b/23
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Protocol: V21, V22, V22bis, V23

The Meridian Amiga BBS (not to be confused with MA BBS of Birmingham) is an informal and up-and-coming bulletin board, based in PeaceHaven. On-line for two months, it already has a good selection of utilities for the Amiga and PC, and is soon to start a PD section, featuring comms, graphics and languages. It is eventually hoped it will become bi-lingual (Eng/French). Sysop Joel Jeffery is, apparently, the youngest in the country. *Paragon* download software is used at the moment, eventually changing to *DIAL-*

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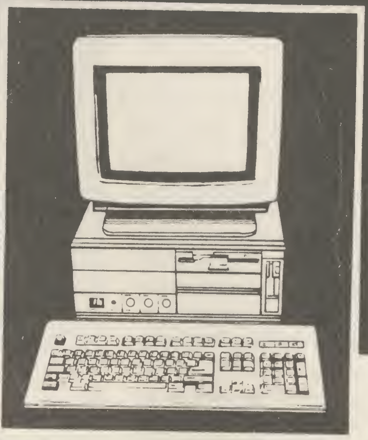

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THE PD COLUMN

There's a wealth of free software out there which is yours for the price of a disk. Our PD man, Adam Waring, takes a look at what wonderful freebies are on offer this week...

RAF Megademo • Amiga • Lorenzo's Domain • Disks 229A & 229B

All this has nothing at all to do with fighter planes and the Battle Of Britain or anything like that, RAF stands for Royal Amiga Force. The RAF are a bunch of demo writers who think that mathematics is fun, and like to show off their complex 3D workings.

The *Megademo* is a mishmash of bits and pieces that come together to form a demo made out from a sequence of demos. There's a *Ghostbusters II* bit, an advert for Coke, and a lot of rotating 3D bits to boot. In fact there is an awful lot to it, two disks full to be precise.

The *RAF Megademo* may not be the most amazing thing around ever, but it has a lot of variety, which let's face it, makes a change.

TOP TEN

What are the best selling PD disks for your machine? What are people buying and why? Well, now you can find out! Every now and again we'll be bringing you the top ten best-selling pieces of PD software from one of the best PD libraries around. This week's chart comes courtesy of Lorenzo's Domain.

It's interesting to note just how many of the disks are for 1Mb machines. That presumably just goes to show how many Amiga owners are expanding their machines, I suppose.

Lorenzo's Domain Top Ten

1 Disk 111 *Rave Demo* by HCC (1Meg)
2 Disk 308 *Nightbreed Picture Show*
3 Disk 702 *Star Trek III* by Tobias Richter (2 disks)
4 Disk 211 *Outsider's Acid Demo*
5 Disk 228 *Robocop Demo*
6 Disk 412 *The Education Of Cool Cougar* (1Mb)
7 Disk 101 *The Definitive Docklands Show*
8 Disk 409 *Walker III Animation* (1Mb)
9 Disk 307 *Luxo Teenager Animation* (1Mb)
10 Disk 502 *Vedit* word processor

If you run a PD library, and you would like your top ten disks to get a mention, then simply send one in next time you send us some software.

PD NEWS

I'm only too keen to tell the world about your new public domain library, but I can't do it without all the information.

Take this letter I received recently. Somebody wrote, begging for a mention in the column. He included the name and address, his prices, and some information about the library. All well and good. What he didn't say, however, was what computer he catered for!

So, come on JN I'm all too willing to help you, but you must help me by supplying all the relevant info.

Also, it would be nice to receive a disk or three to review. That way, I can really tell the readers exactly what you've got to offer.

One new library that did manage to provide all the relevant details is C Hack's Public Domain. The library is run by C Hack – Mr Hack to his friends. It's an ST-only library, and is dedicated exclusively to demos.

Mr Hack (I'm a personal pal) has around 100 disks in his collection, however a proportion of these are labelled 'top shelf', and are only available to those who can enter a public bar and can get married without their parents' consent. Blimey!

Anyway (ahem), costs are £1.75, or £1.25 if you supply your own blank disk. Compilations of two single sided disks on a double-sided jobbie are available too. The price then drops by 50 new pennies.

Or if you want to test out the library's wares before you splash out your hard earned cash, an SAE and blank disk will secure you a copy of the *Beat Box Demo*. If you're clean out of blanks at the mo then not to worry, a cheque or postal order for 70p will do.

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104: Lorenzo's musical delight.
105: Future Composer
106: Noise Tracker Collection (3 disks)
111: Rave Demo (1 meg) by H.C.C
114: NEW Music demo by H.C.C. 5 great new tunes with a cool menu screen
118: Digital Concert 5: by Flash Productions hilarious digitised comedy.
123: Powerhouse Music Disk No. 1
124: Follow the Sign by Helloween. (2 disks). An amazing sampled song.
125: Chaos & Megadeath: Chaotic Sounds No 1: 12 Excellent songs.
128: Revolutions Music Disk. 53 Tunes with great loader.

DEMOS, INTROS & MEGADEMOS
209: Scoopex: Mental Hangover
210: Alcatraz: Megademo 4: (3 Disks)
211: Outsiders: Acid Demo
218: The Silents: Fantasy: (2 disks): Great pictures
221: Popeye meets the Beachboys: It's ravin mad pal
222: BudBrain Mega Demo X (2 disks)
223: Deathstar Mega Demo (2 Disks)
224: H.C.C. Toxteth Demo: Hilarious
226: Freddy Krugar Rap.
228: Robocop demo
229: RAF Megademo: (2 disks): Some great animation on this one
230: Red Sector Megademo: (2 disks): Simply one of the best around.
233: The Secret Policeman's other ball: (2 disks): When I were a lad..

GRAPHICS PICCYS AND ANIMATION
304: Fish 295: Mandel Mountains
305: Lorenzo Graphic Utilities
308: Nightbreed Slideshow by H.C.C: These are the the best pics I've seen yet
309: Forgotten Realms Slideshow by Fraxion.
311: Viz Slideshow: 12 Great digitised picures from VIZ 1990 Calendar.
315: Miller Lite Advert.
316: Holsten Pils Advert.
407: Walker 1 Animation (1 meg). Been around for a while. A classic
408: Walker 2 Animation (1 meg). Yep! You got it, another Classic.
412: The education of Cool Cougar (1 meg) Brilliant
417: Lotus & Unicycle Animation: (1 meg): You'll like this one.
419: Agatron X-Wing Animation: (1 Meg): Flying sequence over Deathstar
420: Fractal Flight: (1 meg): Demo of Fractal Flight by Hypercube. Wow!!
422: Ugly Mug goes for a spin. Neat animation using digitised pictures.
423: Walker 1 Animation (2 meg), (2 disks). The full version, it's a classic.

GENERAL
500: Jazzbench: Jazz up your Workbench
501: Fonts Disk: Loads of fonts
502: Wordprocessor
503: Spreadsheet
504: Database
507: Virus Killer Disk
508: Tetra copier. New and very very good come alive easily.
511: North C: Complete programming language by Steve Hawtin
512: Complete C Manual: (2 disks): 200 page manual with 70 example progs.

GAMES
700: Lorenzo Games Collection 1: Old faithfuls Invaders etc..
701: Fish 347: Drip Game: Pure dead brilliant
702: Star Trek 3: (2 disks) : absolutely fantastic.......
704: Blizzard Game
705: Monopoly
707: Paranoid: Arkanoid like game with its own screen editor.

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And the address. You'll find C Hack's Public Domain at 19 Latimer Drive, Laindown, Basildon, Essex SS10 4AD. Or perhaps you could give Mr Hack a bell. (He's been collecting them since he was seven.) His phone number is 0268 416888.

CPC DEMOS WITHDRAWN

I've just heard that a number of demos for the CPC have been withdrawn from several public domain libraries.

The problem is, you see, that some of these demos, which hail from the continent, use music that has been hacked from commercially released games. This is of course illegal, as copyright is owned by the software houses who own those games and are not amused by seeing them appear on a load of illicit demos.

So demo writers beware, the use of such tunes – or any other part of a program, for that matter – is not going to make you a famous celebrity, and in fact will actually decrease the chances of your work being admired by computer owners.

Now I realise that good music is particularly hard for the demo writer to come by, and the abundance of dross can quickly become tiresome. But if you can't do it yourself, then you had better just leave it out. Otherwise your work might not be seen by those who'll appreciate it most, and that, after all, is what PD is all about.

Big STOS Demo • ST (double sided) • Gunning PD • Demo 13

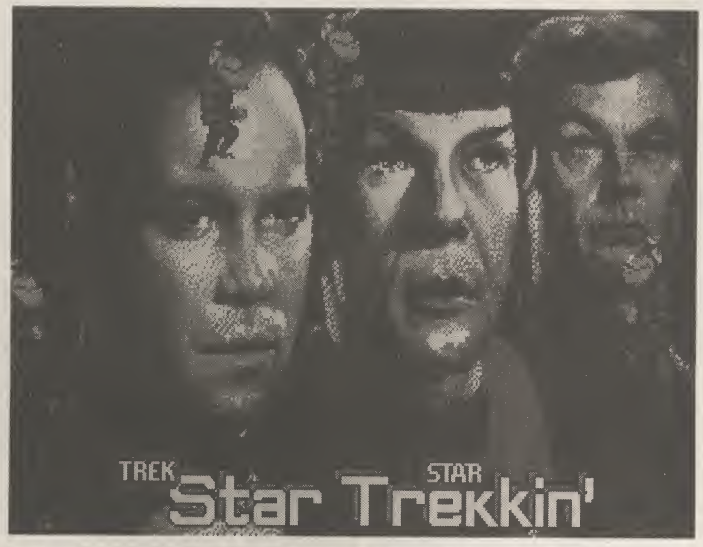
STOS has proved itself to be a BASIC to be reckoned with. So much so that demos – usually the exclusive domain of machine-code freaks – are becoming widely available in the language.

The *Big STOS Demo* is comprised of ten or so such demos. They may seem a tad slow when compared to their machine code counterparts, but then again, they are written entirely in BASIC.

The compilation opens with Cedric the robot. You move him around with the joystick (or keyboard, if you're that way inclined). When he's lined up with the demo you wish to view, a quick stab of the fire button will take you there.

There are quite a few on the disk, but the one that took my fancy was the *Star Trekkin'* demo. The crew of the USS *Enterprise* sing along to the song of the same name. Captain Kirk, Spock and Dr McCoy all move their mouths in perfect harmony to the music. ■

• Reverse scrolling from Big STOS Demo.



• Star Trekking across the universe, with Captain Kirk, Spock, McCoy and all their mates.

WHERE TO GO

Gunning PD, 47 Auchingane, The Tryst, Edinburgh, EH10 7HX. Telephone 031 441 7952. If you're gunning for ST software then Gunning could supply your needs. Its catalogue is yours for three first class stamps. When you know what you want to order, disks will be a pound a piece.

Lorenzo's Domain, 30 Colquhoun Square, Helensburgh, Scotland G84 8AQ. This Amiga library has a very 'clubby' feel. Competitions are run regularly, and they aim to send out your disks within a couple of hours of receiving your order. The disks are dirt cheap too. The princely sum of 99 pence is all it costs for a disk full of delightful PD.

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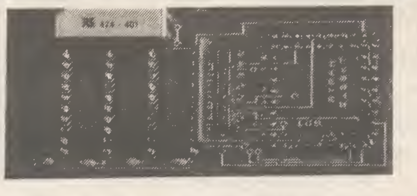

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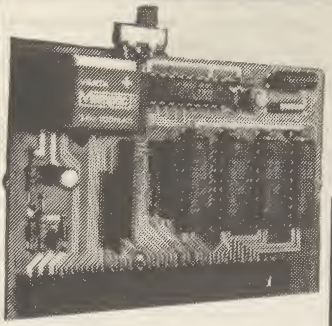

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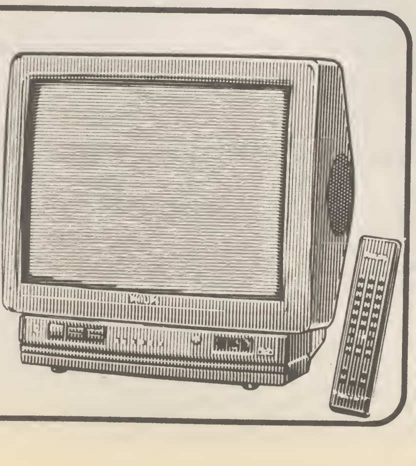

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TECH TIPS

Does your PC keep packing up? Is your Amiga less than friendly? Would your ST try the patience of a saint? Write to Keith Pomfret's Tech Tips and we'll soon see you right. Send your sorry stories to Tech Tips, Beauford Place, 30 Monmouth Street, Bath BA1 2BW.

■ HELP! Stateside Amiga

I got a present of an Amiga A500 from a dear American auntie, only problem is. ... it is, naturally enough, NTSC. I have no NTSC monitor or suchlike, so I would like to know how to convert it to PAL. Being the adventurous type, I would like to try this myself, if possible. I guess this involves changing to the UK spec. Is this correct? If so, could you please give me a few addresses where I might be able to get these parts, say by mail order. Thanks.

By the way, I love the mag and the Tech Tips. Keep scribblin'.

I don't know of any Commodore Service Centres or anyone in the 'know' about Amigas in Ireland whom I could ask.

Paul O'Flynn, Carrigrohane, Co. Cork

The list of people with enough knowledge to lead you gently through these changes is sadly depleted on your side of the Irish Sea, so I'll point you at Simpson electronics instead.

Paul Simpson runs a tight ship (from 11am to 8pm) and will either be able to provide the info you need or point you at someone who can help. Simpson Electronics is on 0332 760353

■ HELP! Easy as pie

I am a 12-year-old school kid and I would like to use my computer (an Atari 1040STFM) for my homework. The kind of program I am looking for is a bar and pie chart creator. Is there such a program on PD? Your mag is absolutely and totally brilliant ! ! !

Mark Hilton, Heston, Middlesex

If there is a PD program to do this job, it's hiding its light under a bushel. Put your finger in the dial and phone some of the PD libraries that advertise in *Express* and as the experts, they should be able to help. If you don't have any joy in the public domain, you could do worse than to get a copy of *ST Mini Office* (Mandarin Software) which contains the necessary pie and bar chart twidget.

■ HELP! True colours

I have recently acquired a Taxan 625, 12 inch Supervision monitor. After much tinkering I have connected up the RGB Hsync, Vsync and E arm connections to my 520 Atari STFM. The only problem is that this display is only in eight colours! After much thought I realised that with three options (Red, Green, Blue), the maximum number of colours is eight. What is happening is that the colour guns are turning colour on or off, with no in-between settings to access other colours. Apart from some colours (the correct ones) on screen, other colours (except the eight mentioned above) turn out white, ie with all guns on full. Is there any way round this? Is there something I've missed, or is there no way to get my 512 colours? Thanks for you help.

Gary Whelan, Durinfield, Cheshire

We don't have a copy of the circuit diagram for the Taxan monitor, but from what you say, it sounds as if you have an incompatible monitor. Contact your dealer or Taxan for details on the expected input levels and specification of the monitor.

While it is sometimes possible to attach assorted computers to monitors by simply making the R, G, B, Sync and Earth connections, you shouldn't attempt this without checking first if the equipment is operating on similar levels. If you have no access to the information via either dealer or manufacturer, a competent TV engineer will be able to work out the approximate signal levels using either documentation or diagnostic test equipment. As TV engineers don't work for charity, you will be charged for this job, but the few pounds it will cost are nothing compared to the cost of a new computer or monitor if you go it alone.

If you've an unusual monitor connected to your computer, send a diagram of the pin connections and any problems or pitfalls in the job and we'll keep them on file for future Tech Tip features.

■ HELP! Apricot Turnover

Re 'Apricot Jam' issue 102, if Mr Cart decides he has no use for his F1, then I know of a local group who would be delighted to hear from him. They may even make him an offer for it.

Would you be so kind as to pass this on to him and ask that he contact me c/o my address? Great new look to the mag.

Robert Brown, Perth

Your name and address are on file and if anyone wants to donate Apricots to you, all they have to do is drop me a line and I'll put you in touch

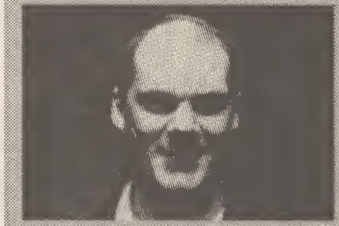
■ PHOTOFIT! Lookalike

You can't fool us. The wig, the spectacles, the tash and the jovial grin can't conceal the fact that you are really none other than the famous Kenn Garroch formerly of *Pompous Consumptive's Weakly.*

Come on Kenn, come out of the closet, throw away the wig and go back to the dot matrix plans of a beebs guts. Forget these 16-bit pretenders to the throne and stick with Acorn.

The KG Appreciation Society (Milton-Keynes Branch)

I don't know who should be more offended. Me or old Two Ns Kenn. He and I are not the same bi-ped (I have more hair and he's thinner). Anyone wishing proof positive of this should send two first class air tickets to the Bahamas with a week's accommodation included. These conditions satisfied, Kenn and I will be glad to step out at a press conference on the beach to prove that we are indeed different. (Ermmm Club class please ...)



• *Keith Pomfret*

• *Kenn Garroch*

An amazing similarity between Keith Pomfret and Kenn Garroch, but are they related? I think we should be told!

■ HELP! Mr Scrooge

Do you have any idea where I can get a machine specific printer driver for the Seikosha GP100 Printer, as although I seem to be able to print using an Epson RX80 driver, I cannot get bold, italics, underlining, etc. I would rather not have to spend £2 or whatever, on a PD disk full of printer drivers that 99.9 per cent of which I don't want, and am in doubt whether it actually has the right one in or not. If any fellow readers can help, I would be most grateful.Oh, and by the way, I own an Atari ST computer.

Mark Freestone, North Ferriby, Hull

Contact a PD library, ask which disk has the appropriate driver on it, buy it, copy it to the necessary disks, format the original and not only have you solved your problem, you've also got a shiny new disk. That should put your net outlay at slightly over a quid.

If you are seriously too parsimonious to spend this princely sum there is an alternative. If you aren't already a member, join your local academic library

Sit in the nice warm library (they're paying for the heat and light) and learn about programming. A printer driver isn't a huge program and if you've already got the Epson driver, you've got something to start from. When you've learned sufficient to write your own driver (and it hasn't cost you a penny) you will be richer in both cash and knowledge.

■ WIBBLE! Amiga stuff

It is pleasing to know that the new Graphics-orientated BlitzBasic is coming out and, while AMOS is still waiting, has a compiler too.

However, the AMOS Club and Mandarin Software will be hard to beat for advice and help. The PD Club (Public Domain Library, c/o Sandra Sharkey, 25 Park Road, Wigan WN6 7AA. Tel. 0942 495261) is able to provide an ever increasing supply of disks at low cost with music and sprites galore on the way.

And what a sparkling performer our Amy is through a good hi-fi system. The Amiga's open architecture with simple audio phono outputs and at least two full external buses is a boon – in my own case the one at the side is still yearning for an

A590 hard drive (or cheaper clone with more than 20Mb capacity).

Meanwhile some of the latest PCs seem to be stealing a march on Amiga software. I have seen the latest super graphics version of the classic *Silent Service* running on a Gold 386. And also when do we get *Flight Simulator 4* with its impressive new random weather generator and plane design facility, and so much else? It's just too bad, Sublogic, the Motorola 68000 chip in the Apple Mac, Atari ST and Amiga gave you fame, so come on – we feel deprived!

Best wishes to *Express* in dear old Bath.

John Gray, Eastbourne

And that's the last time that the chaps here in 'dear Old Bath' allow these pages to be used for blatant advertising. Still, I'm sure it's for a good cause. If you think that you've got problems with the games coverage on your Amiga, be thankful that you aren't trying to buy games for the Archie. The *Express* Arch library takes up one small shelf whereas we have to send the ST, Amiga and PC progs to the crusher on a weekly basis to free the space.

■ ADMONISHMENT! Mouse

I got to page 58 of Issue 101 and started looking at the problems people are having with their computers (as is my sadistic bent) and lo and behold the very first question someone has, you go and boob and give them a slightly misleading answer.

In response to Barry Walton's first question about using mice with the Commodore PC20. Commodore recommend their 1352 mouse not because it is expensive (it only costs approx £32.00 + VAT and in my own opinion it is not the nicest of mice), but because they have an on-board mouse driver and trying to use any other serial mouse will end in a lot of frustration and a mouse which just refuses to work. All is not lost however, if a discerning punter has bought a serial mouse from someone like Genius, Naksha, Logitech or Microsoft all of whom make far superior squeakers, Commodore itself, will point the (by now) frustrated punter to: Starcol Computer Centre, 6 Cork Place, Upper Bristol Road, Bath BA1 3BB.

The reason for this is that Starcol supplies a clever little utility which when invoked will disable the on-board mouse port and allow the user to load a specific mouse driver from one of the aforementioned manufacturers, all for the very reasonable sum of £11 + VAT including P&P. That's that bit off my chest.

Now for a puzzler. I have a problem using an Atari 1040 ST with a Star LC 24-10, a cut sheet feeder and *First Word Plus*. If I write a document with the aid of *First Word Plus* and print it to the LC 24-10 using an Epson LQ/SQ (proportional) printer driver with no cut sheet feeder attached, all is hunky dory and I usually have a perfect copy. Now I attach the cut sheet feeder, flick the appropriate dip switch on the Star (1,4) to enable the cut sheet feeder, and print the same document. All my line feeds after a carriage return now disappear thereby giving me effectively a document with no paragraphs. I am baffled! I have approached both Star and GST with (so far) no satisfactory resolution to this little matter. I do not want to invest in Star LC 24-10 specific printer drivers from GST if it will not cure the problem. Do you or does anyone out there know the answer to this one? Help, please!

Incidentally I use a Naksha upgrade mouse which is streets better than the ST's own and with the Amiga specific cable will work a treat in any Commodore PC without the need to disable the on board mouse port.

Bill Brouard, Freshford, Bath

Thanks for your input on the mouse problem, although further research has shown that it depends on which machine (yes machine, not model) and what software and configuration you have as to whether you will run into the mouse problem.

To be on the safe side though, your advice should be followed. Thanks also for your comments on the Naksha mouse on the PC.

Your printer problems have fair got me beat, but I'm sure that you're not the first to stumble across them and if some kindly Tech Tipper will please step out from the wings ...

■ HELP! Dodgy Ticker

A few words about the clock problems mentioned by George Garven and Andy Bennett. I too had the problem of my Amiga refusing to recognise the clock of my 1.5 meg board. A phone call to Power Computing produced a cure, for the clock at least: the old, Workbench 1.2, version of SETCLOCK apparently differs from v1.3 and will reset an otherwise stubborn clock.

My only problem now is, did a virus cause my problem in the first place?

Ken Holland, Wareham, Dorset

So if there's anyone out there with any advice on whether it was a virus or not, drop us a line. Any PD library will offer a plethora of virus killers and diagnostics. If you think that you've been infected, get one of these and check out the machine. *VirusX* from Steve Tibbett is reckoned to be pretty strong medicine, but new viruses and mutations of old keep disinfectant writers on their toes.

Keep a regular eye on which new virus killers are being introduced and always use the latest versions. A colleague lost two month's work because he thought that his machine was protected. A new virus came along, poked its tongue out at his disinfectant and proceeded to wipe away his work. ■

■ HELP!... Of many things

I might as well get the negative things out of the way first, so... Way back in late 1988 and early 1989 I ran a bulletin board called Tongafix QBBS. It only ran after 9 pm, and even then at V23 only, so it never attracted many callers. I strove to get my number on national lists such as that in your magazine, but to no avail. Eventually I closed down in January of 1989. People kept calling for a while, but I didn't mind the inconvenience. In fact it had all but died out by July of the same year when *P•rs•n•l C•mp•t•r W•rld* decided to publish my number. Around this time, another brilliant BB, The Mancunian, closed. It took until November to get *PCW* to stop publishing my number. Calls continued, but only around one a week, which I didn't really mind. When you changed the look of *NCE* and started a BB list, I began to tear my hair out when I saw the Pete Rodds's Mancunian and my Tongrafix QBBS were still listed. It ain't fair, please take us out.

On a lighter note, you might feature Merk instead 061-434 7059 in Express on-line. With CD-ROMs full of PD, a several hundred Mb disk, 2 lines, both of which are Dual Standard, it must be one of the best BBs around.

I see R Morgan of Tyne and Wear (*Express* 100) has four computers. Barely anything is it.... Mind you, my CPC6128, ZX81, 3 Rair Black Boxes, Casio fx7000 and American Research Corporation PC are probably fewer than some have. I have to admit that I cheated a little with the fx7000. Most would call it a programmable calculator, but Casio call it a personal computer and who am I to argue? The three Black Boxes (bet you don't know those.....) were amongst the original 8086 machines. They run Concurrent CP/M and are supposed to be multi-user, but they're rather slow.

On the relative merits of various computers, one has to remember that a computer's no use if you can't do anything on it. Just as my Black Boxes are faster and more powerful than my CPC6128, try buying an arcade game for the Black Box. Essentially, what makes one computer better than any other is the software available for the computer in question. Horses for courses.

Whilst the rest of the world seems to have fallen in love with Windows 3.0, I simply can't stand it. I don't like the WIMP environment on the Archimedes I use at school, nor any WIMP environment on any computer. Okay, so they look nice and help new users, but surely what it means is there is little room for innovation. Compare *WordStar Professional 6* to the original *WordStar* and you'll see the newer one is far, far better in terms of the user interface methods. Hence, a common user interface brings everything down to the same level. You might compare this to the whole IBM PC architecture. Whilst the PC world is still constrained to this, computers which don't use it have much more potential, like for example, the Archimedes and Amiga. Mind you, I have to concede that the PC standard has flourished (I believe around 10 million PCs are sold per annum), whilst the Archimedes and Amiga aren't nearly so successful.

I must congratulate *Express* on the new look. It is far better than before, although I do find that the PC column is always trying to teach something like 'How to edit Autoexec.bat'. Really a bit basic,and not something I consider necessary (my computer came with manuals), nor Interesting. Let's have more brief software reviews, and tips. Now, pop out to the *Amstrad Action* department and ask them for a copy of Issue 22. Turn to page 41. They ran a series 'A day in the life' for a couple of months. It was essentially an account of some CPC user's day. I found it very interesting and would like to see a similar thing in *Express*. With 22,000 readers, I'm sure you'll find that there are readers who'd write for it. Me for one.

David Tonge, East Didsbury, Manchester

I don't know how this one ended up in the Tech Tip postbag, but it's interesting enough to run anyway. The story of the demise of Dave's BBS and its inclusion on subsequent BBS lists alone merits a little advice.

Many potential BBS sysops started their service by sharing a voice line like Dave did and putting up the BBS over night.

This is fine until either the calls dry up or for some reason you have to take the BBS down. Because of the haphazard way that bulletin board lists are compiled in the UK and the lack of any real facility to audit them, the lists can get out-of-date very quickly. Bulletin boards are an interesting and absorbing way of getting into comms without the huge telephone bills, but on the downside, a good BBS can cost the sysop a couple of hours a day.

This time overhead proves too much for some and they quit. If it's a shared voice line or the line reverts to being a voice line, weeks, months and sometimes years of picking up the telephone and hearing the dulcet tones of a modem can be expected.

If you intend to run a bulletin board (BBS), the best advice you can be given is to get a dedicated phone line for it.

"Ouch,the cost," I hear you cry. True, but if you are to do it seriously the small investment of a dedicated phone line will reap dividends. If you need to remove your BBS at a later date, you won't have the hassle of being woken at 3am (Why do all comms enthusiasts operate in the middle of the night?) to listen to the screech of a remote modem.

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ST EMULATOR FOR THE AMIGA

On-line users of Usenet, the loosely-knit international E-mail and file transfer network that links educational and other on-line modem users together, cannot have failed to notice the appearance of Atari1, an ST 'emulator' for the Commodore Amiga.

Unlike earlier incarnations, the program really does work, albeit without the Amiga's sound and serial port functions operating. The program is illegal however, in that it appears to consist of most of the ST's operating system - right down to the dialogue boxes from TOS 1.2 (the ST's operating system) - downloaded to disk and then 'hacked' to work on the Amiga.

One software engineer from Atari went so far as to describe Atari1 as 'a grave and flagrant violation of Atari's copyright.' In a message posted to the Usenet network on October 16, Allan Pratt of Atari urged on-line systems and BBSs, as well as Usenet- linked computer sites, that are carrying Atari1, to take the program off-line for copyright reasons.

Interestingly, Pratt reported that some on-line sources had suggested that Atari plays the good guy with the emulator and takes no legal or similar action. He dismisses such suggestions as 'nonsense', saying that copyrights must be protected.

So how does the program work? Essentially, it switches out most of the Amiga's graphics chips, leaving the Amiga's 68000 microprocessor to be driven by RAM alone. That perhaps explainins/// why Atari1 runs very slowly on the Amiga. It also explains why colour programs run intermittently under Atari1, and why the resultant screen resolution is pretty appalling.

By the time you read this column, Atari1 may be the subject of legal action by Atari US. If you do come across the package on your favourite on-line system or BBS, however, I reckon it's worth downloading, if only for the novelty value. Be careful who you pass the program along to, though, as its legality is highly questionable.

TT SHIPS IN CANADA

Ron Kovacs' *Z-Net* newswire reports that initial quantities of the Atari TT are now shipping to dealers in Canada. Demo machines only are available at the moment, but end-user supplies are expected towards the end of November. The basic unit - presumably a 32MHz version - will sell for Can$3,995, with Atari Canada selling two monitors alongside - the Dual-sync colour at Can$ 895, and the Philips TT194 with 1,260 x 960 pixel resolution at Can$1,495.

The Philips monitor looks quite interesting, as its a large-screen full-page unit that is billed as similar to the Moniterms, but at a relatively lower price.

'EAT MY SHORTS'

If you're one of those extravagant people who owns a Sky TV dish, you'll presumably have heard of Bart Simpson, the, er, street-cred child of the squalid Simpson family. The Simpson cartoons - essentially a 1990 version of the Flintstones - are currently taking the US by storm. Thus it's now time for the console game of the cartoon. '*Bartman: Avenger of Evil*' is the name of the hand-held console unit due out at the end of November, manufactured by Superplay. Also scheduled are $19-95 cartridges for the Nintendo and Game Boy consoles. As Bart says on TV: 'Eat my shorts.'

ATARI READY FOR COMDEX

Inside word is that Atari is planning a big spread for Comdex Fall, the mega-computer show which opens in Las Vegas on November 12. The company will officially launch its SLM805 laser printer, along with some pretty impressive DTP systems based around the Atari STe, say my sources.

The systems will have to go some, however, as PC clones with low- end lasers can now be bought with a budget of around the $1,495 mark in the US. The expensive part of any real DTP system - and one that adds around $1,000 to the price - is going to be the addition of Postscript.

It will be interesting to see how - and whether - Atari plans to tackle the problem of Postscript, or will we see the SLM805 consigned to the same place as the SLM804 laser printer, ie the ranks of oblivion? (only joking Mr Gleadow!)

PHANTOM OF THE LASER

Talking of phantom laser printers, those lucky ST owners who actually have an SLM804 laser printer will be aware that the laser must be powered up if the host ST can be used. This limitation is one that ST users have had to put up with in order to enjoy the low cost of the SLM804.

Until now. Widgets by Decker of Lake Oswego in Oregon (for real, I assure you!) has released the Phantom of the Laser, an interface box that sits between the ST and the SLM804 laser printer and mimics the laser when it is turned off.

The $40 unit is powered by a 12 volt DC external power supply and is available to order.

Contact: Widgets by Decker, 2399 SW Palisades Crest Drive, Lake Oswego. Oregon, OR 97034. Tel: 0101-503-638-3940.

BIG BLUE SIGNS WITH SEGA

IBM Japan is reported to have signed a deal with Sega (yes, that Sega) to develop a PC-AT-compatible games system. The system will sell for around the $600 mark, and will also come with an optional CD-Rom system. Don't hold your breath too long though, as the machine isn't expected until early next in Japan, and there are no guarantees that the system will be launched in the West.

NEW NINTENDO SOFTWARE

In a surprise move, Nintendo has announced plans to allow third-party companies to produce games software for its games system. The move, though welcomed in Japan, has been met with bitter recrimination by Atari. Vice-president Dennis Wood described the announcement as, "A tacit acknowledgement that its past conduct violates US anti-trust laws'. He went on to say,"While Nintendo's move to loosen its manufacturing restrictions may appear to ease its strangle-hold on the video game industry, in reality it does no such thing. As a practical matter, Nintendo's move is a sham.

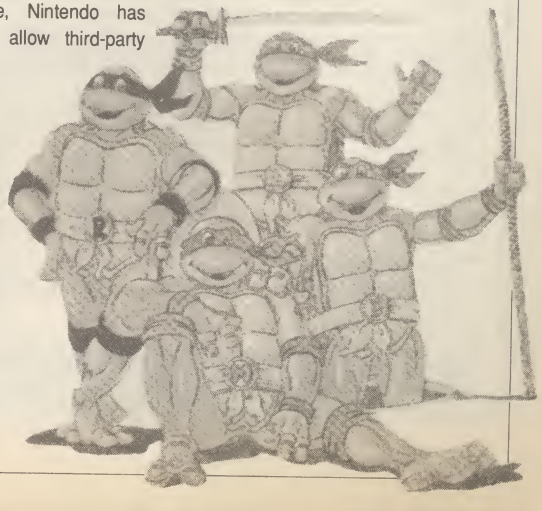
"So long as Nintendo uses a lock-out chip in its cartridges, it still has total control over the titles and quantities of the games that are available to consumers. Because Nintendo is the sole source of the lock-out chip, it can allocate the chips to companies in whatever quantities it likes".

Wood went on to say that it doesn't really matter who makes the game cartridges, so long as Nintendo still has sole control over the 'sourcing' of all the component parts, as mandated by Nintendo's licence. Although a number of different companies are reported to be discussing terms with Nintendo, Atari's spokesman Dennis Wood is fairly sceptical about the possibilities. He maintains that the move is merely to prevent Nintendo's rivals from developing an alternative 'open architecture' games system which could be extremely awkward and damaging for the company.

TURTLES COMING SOON

According to a press release issued last week by Dark Angel Systems (DAS), a program featuring the ubiquitous Turtles is being developed for the Atari ST. The bulk of the as-yet untitled program has been written, leaving DAS to sort out the licensing of the game with Mirage Studios and Archie Comics, the joint owners of the Turtles copyright.

DAS seems to be pretty confident that the game - set in the sewers of New York City, and featuring Leonardo, Raphael, Michaelangelo and Donatello, plus all the rest of the crew - should presumably be out in time for Christmas. In the meantime, all you can do is watch this space.



• Yes, it Turtles again. If you can't avoid them check out the latest offering for the ST.

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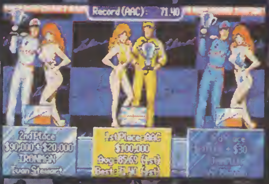
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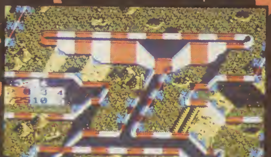
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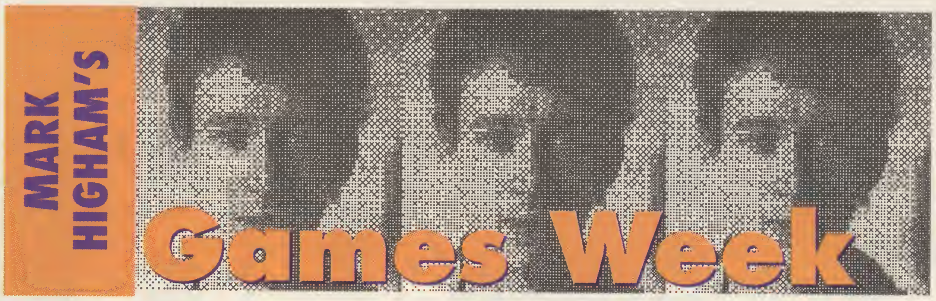


MARK HIGHAM'S Games Week

For all its wonderful qualities, the trouble with *Sim City* was that it was more like building a city out of Lego than constructing design masterpieces. Unfortunately, it just didn't give you enough options to realistically simulate city development. Now Ocean is working on a *Sim City* follow-up and the demo I've seen suggests that it could knock spots off its predecessor.

Sim Earth is a planet simulator. You can choose to play at different times of Earth's history from the beginning as the surface cooled and the continents were formed, right up to present day where cities draw their electricity from nuclear power stations and people are flying all round the globe. Using a range of icons and drop-down menus you can change the polar wobble of the earth, increase or decrease protection from the sun's rays and induce different rainfall patterns. As these conditions are adjusted, so people advance differently in different areas. Thus, starting at the beginning of time, you could create a superior race which thrives in the sea rather than on land.

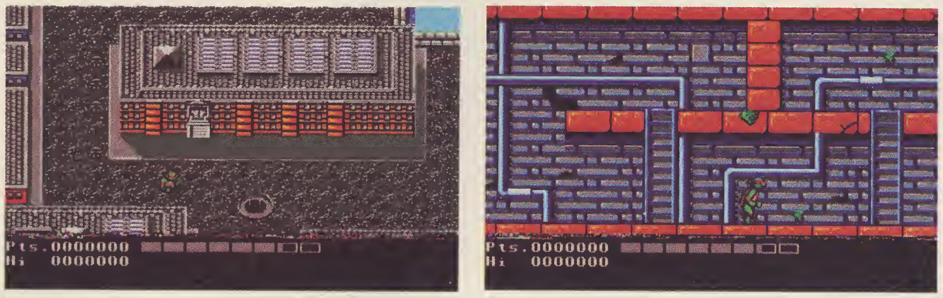
As time advances you face problems relating to each age. Nuclear plants could explode, different race or civilisations can die out and new breeds can be formed – all with potentially disastrous consequences for themselves and other species.

In such a short space it's impossible to convey the enormous range of options open to you. If you've never played *Sim City* you may find that there are just too many avenues to explore, but if you've spent hours playing *Sim City* and realised all its limitations then *Sim Earth* is going to be exactly what you need.

PC and Macintosh versions are due to be released before Christmas with the ST and Amiga conversions following in the New Year. Keep an eye open – you can't afford to miss this.

TOTALLY AWESOME, MAN

Caught sight of the first ST demo of Mirrorsoft's *Turtles* this week. There were no bad guys in the game so it's difficult to judge how the final action will run. The demo I saw comprised a city level and a platform section. The objective was to direct your turtle around the city and then dive down a manhole to confront the evil Spitter and his cronies. As you can see from the screenshots the sprites are large in the sewer screens. Hopefully Mirrorsoft will sort out the animation and scrolling problems in the demo by the time the game comes up for release. Way to go.



• Way to go Donatello... Mirrorsoft's *Turtles* game is split into two distinctive levels – above and below ground. When the game's finished those heros in a half shell will face Spitter's evil henchmen.

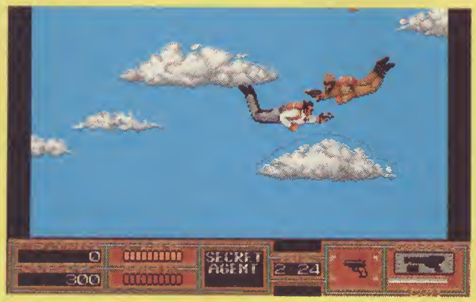
A NEW DIMENSION

Hold onto your hat, this is frighteningly different! Incentive achieved fame after its release of *Driller, Dark Side*, *Total Eclipse* and, more recently, *Castle Master*. Although its game environment doesn't seem so radical anymore, at the time it was one of the most innovative techniques around. *Castle Master* was the first of this Freescape series which was originally coded on an ST rather being ported up from the 8-bits. Incentive is now employing those techniques in a brand new program called the *3D Construction Kit*.

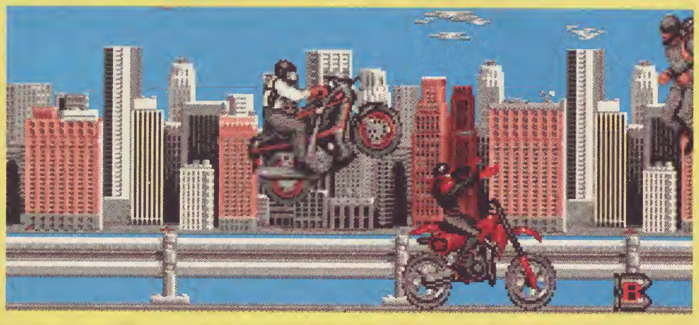
This isn't so much a game as a landscape designer. The program enables you to construct a 3D reality, designing and planning towns, streets, buildings and objects. When you've designed your environment you can walk through it and interact with the objects. The opportunities for building wild and diverse settings such as space stations, underwater cities and even your bedroom mean the program could be seriously radical.

PLAYING TIPS: Sly Spy

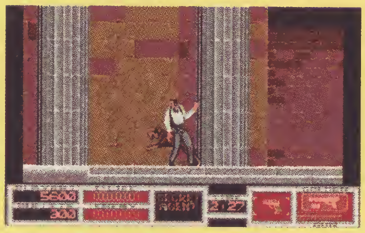
Having trouble tackling the eight levels of this mega blast-'em game? Michael Ripley from Glasgow has tirelessly ploughed through all the levels and he's come up with some helpful advice on how to complete each level.



● Freefall: Just dodge and shoot the enemy. You need not worry about them harming you because they only shoot at you if you leave them alone for too long.



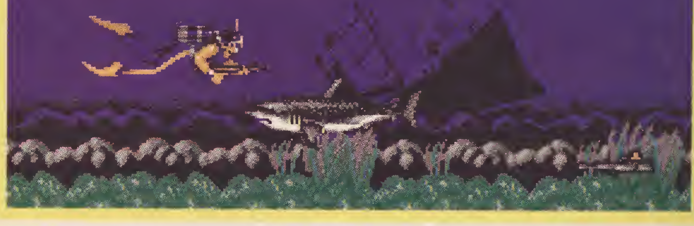
● Level Two: Try and save ammo by only shooting the enemy once. Do a wheelie by holding the fire button and pressing up when you see an enemy hanging in thin air. Then let go of fire and press it again fast to shoot. When you reach the black sedan fire like crazy at the bad guy who pokes his head out of the window, ducking whenever he shoots.



● Level One: Duck for as much time as possible to avoid the enemy shots. If an enemy throws a grenade, jump over the explosion and duck again.

● Level Three: Try not to go up the ladders and stay down on the ground. You'll find the route is much safer and easier since you only need to kill two or three people. When you reach the stack of boxes go up the ladders and walk right shooting and dodging the enemy. When you reach the rope swing, ignore it and walk off the edge. Don't worry about the water, it's harmless. When you come to the big chappie use your gun while you still have it, then kick him.

● Level Four: Dodge and shoot the divers. Collect as much stuff as possible. When you come to an area where there is about five shield-like shapes, shoot them and go through. You come to a place where these shields are falling down. You have to time your moves correctly to get past. When you reach the big shark stay up in the top left hand corner of the screen. When he starts moving away, follow him, shooting all the time. Don't run out of ammo at this point.



THE ALL FORMATS TOP TEN

For the week ending October 20

1	*F19 Stealth Fighter*	MicroProse	SP/ST/AG/PC
2	*Shadow Warriors*	Ocean	SP/CO/AM/ST/AG
3	*Back To The Future 2*	Mirrorsoft	SP/CO/AM/ST/AG
4	*Kick Off 2*	Anco	SP/CO/AM/ST/AG
5	*Cricket Captain*	D&H Games	SP/CO/AM/ST/AG
6	*Turrican*	Rainbow Arts	SPCO/AM/ST/AG
7	*Robocop*	Ocean	SP/CO/AM/ST/AG
8	*TNT*	Domark	SP/CO/AM/ST/AG
9	*World Cup Soccer '90*	Virgin	SP/CO/AM/ST/AG
10	*Chase HQ*	Ocean	SP/CO/AM/ST/AG

Chart compiled by GALLUP. © European Leisure Software Publishers Association

Incentive is claiming the *3D Construction Kit* can be used to create 3D computer games (either arcade, adventures or simulators) or even be used to design visualisations of real-life projects.

3D Construction Kit will be handled by Domark and is set for release in April. PC, ST, Commodore 64, Spectrum and Amstrad formats are going to be written. For further information, contact Incentive on 0734 817288. ■

py -- Secret Agent

● Level Five: Go up the ladder to get the machine gun then head right and shoot all the tigers.

● Level Six: Shoot some of the enemies then walk RIGHT until you fall down. Now walk LEFT until you fall down. Now go right, then left, then right etc. When you come to concrete ground walk RIGHT until you meet the guy who throws his hat around. Shoot him in the head, dodging his hat.

● Level Seven: When you reach the section where the arrows point up go as far back on the screen as you can. When the diver comes out, start shooting him in the face. When he fires his missiles, go up a bit and start shooting them.

● Level Eight: Make your way up.

HERE COMES SPIDEY!

SPIDERMAN
EMPIRE – £19.99

Comic strip heroes regularly come under the scrutiny of games programmers and, since *Spiderman* is the most popular superhero, he's found his way into more computer games than any of his contemporaries. The trouble is, because Marvel Comics prides itself on dramatic action, all the games have tended to be action-based. What makes this latest incarnation of *Spiderman* different is that it's a puzzle game rather than a straight-forward beat-'em-up.

The objective of the game differs little from those traditional comic strip conversions: find the evil Mysterio and rescue the adorable Mary Jane.

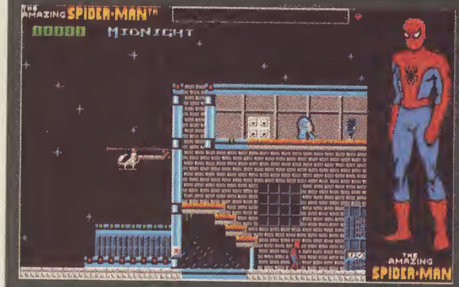
Spiderman is played on a series of static screens so that when you reach the end of one screen you immediately move to the beginning of the next. Each of these screens is given a specific name, enabling you to map out your progress with ease. These screens are all bursting with problems. For example, some screens might contain a complicated network of tunnels with rats running round, water to wade in and doors to open.

It's the doors which make up most of the problems. To find the switches that activate them you may need to go back several screens. The switches are an essential element to the game because it's only by firing a web or walking over the top of them that you can activate them. If a laser beam stands between you and a switch then you need to find a switch to turn off the laser before you can activate the other switch behind it. The switches are employed throughout the game to call lifts, conjure up floating rafts and even kill mindless zombies roaming around some screens.

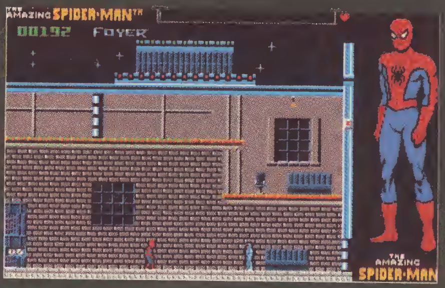
As you fall onto the zombies, or walk into moving obstacles like rats, you lose energy. A sprite of Spidey down one edge of the screen reflects your remaining energy and when it's all gone you're dead. There are four clapperboard screens located round the maze and if you take a trip into one of these your energy is restored.

Learning how to control Spidey, find the switches and negotiating the more problematical screens is what makes the game fun. But if you're looking for state-of-the-art visuals you won't find them here. In an effort to cram as much of the maze on screen as possible, the main Spidey playing sprite has been severely shrunk to 'Land of the Giants' size. It has, however, been expertly animated.

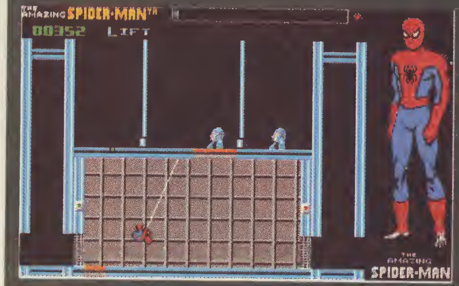
The fact that this isn't the usual beat-'em-up action game is going to put many people off and this is a shame. *Spiderman* is an enormously addictive game and comes with enough twists and turns to keep you going round in circles for hours.



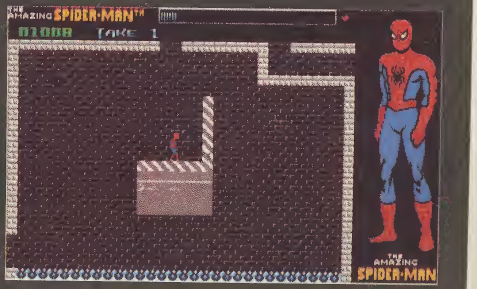
• The action starts and Spidey crawls onto a helicopter. This is where you meet your first switch.



• When Spidey loses energy the static sprite on the edge of the screen is slowly undressed – ooh er!



• Hit all the right switches and you eventually get through to the lift.



• Visit the clapperboard screens and your energy is restored to full power.

This week we start a series looking at the essential and not so essential elements of computing, beginning with high quality dot-matrix printers.

WHY BOTHER WITH 24-PIN PRINTERS?

One of the first peripherals most of us buy is a printer. These come in many types – daisywheel, inkjet, laser – but by far the most common is the dot-matrix printer.

Dot-matrix printers are popular because they are flexible, yet cheap. They can print graphics, with colour printing models available, and are not limited to one font and size like daisywheels. You can find a dot-matrix printer for fractionally over £100, unlike the £1,000 or so you would pay for a laser printer. The pay-off for this is in quality — text produced by a dot-matrix printer is not of the same standard as a laser or daisywheel, having a blocky, bitmapped appearance.

Dot-matrix printers work using a vertically arranged column of pins which scan over the surface of the printer and where required strike the paper through an inked ribbon, leaving a mark. The number and thickness of the pins is critical to the quality of the final output.

Because of the pin arrangement the printed image is made up of a pattern of dots. The print head is one character high so each letter is made up of the same number of rows of dots as the print head has pins. The number of columns of dots depends on the speed the print head moves, but is normal set up to be the same spacing as the rows.

Thus you can see that the matrix of dots (hence the name) which makes up a character is closely linked to the quality of the printout. With a 9-pin printer characters are made up from a 9 x 6 matrix and have a blocky look to them, much like characters on a monitor. To try to make the quality more acceptable many 9-pin printers make two or even three printing passes, moving the head fractionally between each one. This mimics having more pins in the printing head, but inevitably the paper alignment is not perfect and printing again on freshly printed ink can smudge the text.

You can see then that the more pins you have on a printhead the higher the quality of the text. Unfortunately, it's also true that because the pins have to be manufactured to much higher tolerances when more of them have to be fitted into the tiny print head, 24-pin printers are more expensive.

Fortunately, however, the price difference between 9-pin and 24-pin printers is coming down. For example, it is now perfectly possible to buy a 24-pin printer for less than £300 – a glance through Shopping Express will show you several models with prices as low as £220.

WHAT FOR?

Clearly a 24-pin printer is worth looking at if quality is important to you, but you can't afford a laser and the lack of flexibility of a daisywheel rules out that route. For ordinary letterwriting and so on a 9-pin in near letter quality mode is probably sufficient. You need a 24-pin if those letters must look A1; but the niche these printers fill best is cheap graphics printing.

If you have graphics and DTP software then a 24-pin printer can set you free to produce work of a usable quality. DTP documents output on a 24-pin will not be of laser standard, but they can be very close, especially if you buy a printer which can emulate a 48-pin by printing each line twice. For instance the Star LC-24-10 can print at 360-dots per inch, higher than a laser! The quality is not of laser standard because the dots are bigger than laser dots and there is some smudging, but it is still impressive.

Before taking the plunge and buying a 24-pin, make sure your programs will support it with the appropriate printer drivers. If your programs have a list of supported printers look for the Epson LQ range – if any of these printers are listed then the chances are that a 24-pin will work fine. Otherwise you might have to put up with graphics being printed in 9-pin emulation. However, text will be in the full 24-pin quality. ■

• Star's LC24-10, one of the most popular 24-pin printers.

SOME 24-PINS TO LOOK OUT FOR

There are literally dozens of 24-pin printers on the market, these are just some of the more common ones. As you can see it is possible to get a really good deal through discount mail order outfits. Remember to take the cost of ribbons into account.

NAME	RRP	Discounted to
Star LC24-10	£259	£229
Star LC24-200 Colour	£369	Not yet in shops
Citizen 124D	£279	£220
Citizen Swift 24	£365	£300
Citizen Swift 24 Colour	£403	£335
Panasonic KXP1124	£399	£249
Amstrad LQ3500	£299	£180
Epson LQ-400	£199	£180
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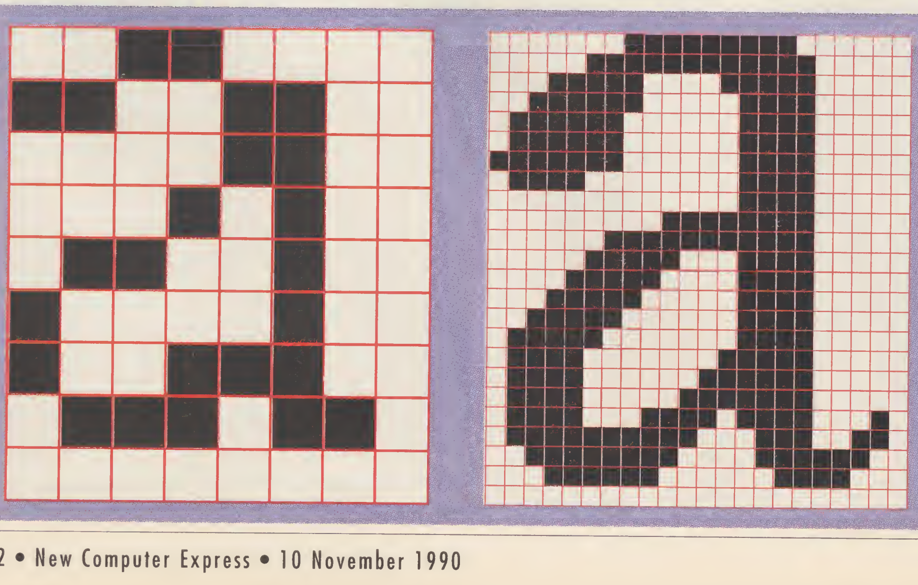

WHAT A DIFFERENCE A PIN MAKES

Or rather 15 pins. On the right is a letter 'a' as printed by a 9-pin dot-matrix printer. The letterform is coarse and heavily bitmapped. To its left is the same letter on a 24-line matrix – you see the difference in quality. The 24-pin can handle much finer images, and the difference in quality in letters also applies to graphics, especialy tints.

If the 24-pin printer makes two passes at printing each line and moves the paper on fractionally between printings it can manage a resolution which, in theory, is higher than a laser printer. Unfortunately smudging and the fact that the dots from a 24-pin are so big they overlap mean that the print quality is not up to laser standards. Nevertheless a 24-pin printer provides an excellent way to get usable DTP and graphics output on a budget.

MAJOR STOCK CLEARANCE

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AMIGA FORMAT
GET THE MOST OUT OF YOUR AMIGA
ST WRITER
DISK ONE
DISK TWO

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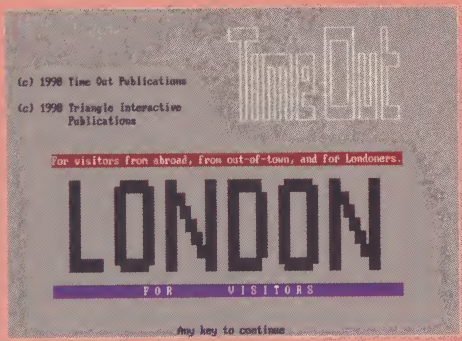
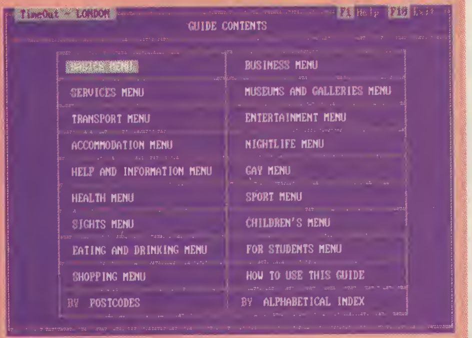
LONDON FIELDS

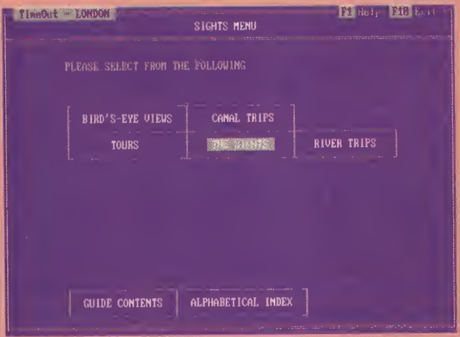
Time Out, the London mag, has launched a database on the capital. Stuart Anderton went to town.


(c) 1990 Time Out Publications
(c) 1990 Triangle Interactive Publications
Time Out
For visitors from abroad, from out-of-town, and for Londoners.
LONDON
FOR VISITORS
Any key to continue

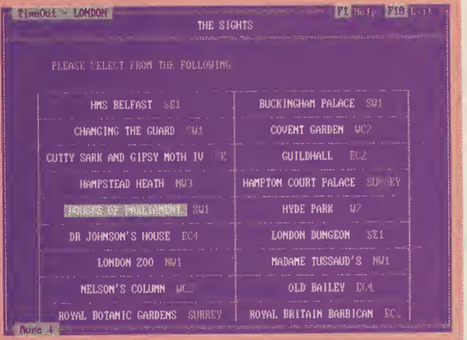
• *The* Time Out London Guide 91 *is a text-based database. Although this means it will run on any graphics adapter it does make it less than pretty.*


TimeOut ~ LONDON
F1 Help
F10 Exit
GUIDE CONTENTS
BASICS MENU
BUSINESS MENU
SERVICES MENU
MUSEUMS AND GALLERIES MENU
TRANSPORT MENU
ENTERTAINMENT MENU
ACCOMMODATION MENU
NIGHTLIFE MENU
HELP AND INFORMATION MENU
GAY MENU
HEALTH MENU
SPORT MENU
SIGHTS MENU
CHILDREN'S MENU
EATING AND DRINKING MENU
FOR STUDENTS MENU
SHOPPING MENU
HOW TO USE THIS GUIDE
BY POSTCODES
BY ALPHABETICAL INDEX

• The main menu. From here you can chose subject areas such as sport, gay life and transport. Navigating around the menu is entirely with the cursor keys.


TimeOut ~ LONDON
F1 Help
F10 Exit
SIGHTS MENU
PLEASE SELECT FROM THE FOLLOWING
BIRD'S-EYE VIEWS
CANAL TRIPS
TOURS
THE SIGHTS
RIVER TRIPS
GUIDE CONTENTS
ALPHABETICAL INDEX

• Having chosen a topic from the main menu, in this case the 'sights' option, you are presented with a further sub-menu with a more detailed breakdown of the information.


TimeOut ~ LONDON
F1 Help
F10 Exit
THE SIGHTS
PLEASE SELECT FROM THE FOLLOWING
HMS BELFAST SE1
BUCKINGHAM PALACE SW1
CHANGING THE GUARD SW1
COVENT GARDEN WC2
CUTTY SARK AND GIPSY MOTH IV
GUILDHALL EC2
HAMPSTEAD HEATH NW3
HAMPTON COURT PALACE SURREY
HOUSES OF PARLIAMENT SW1
HYDE PARK W2
DR JOHNSON'S HOUSE EC4
LONDON DUNGEON SE1
LONDON ZOO NW1
MADAME TUSSAUD'S NW1
NELSON'S COLUMN WC
OLD BAILEY EC4
ROYAL BOTANIC GARDENS SURREY
ROYAL BRITAIN BARBICAN EC
More ↓

• With some of the options this menu structure can be several layers deep. The menus are logically laid out, so that the 'manual' is only 23 words long!

Computer-based books have still not caught on. Despite the technology being there to make a light, portable volume, no-one has yet achieved any success with such a system.

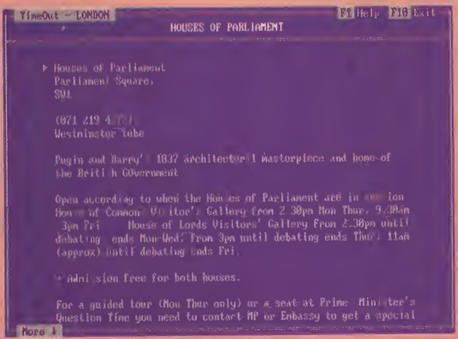
However, on-line directories are a different matter. Various huge technical and reference works have been coded into easily-accessible database form and these are very useful versions, being much faster to use than their paper counterparts. But most of these systems are academic works, used for research, or corporate databases sold for vast amounts. Few of these systems are aimed at the consumer.

One system that is firmly aimed at the end-user is *The Time Out London Guide*. This is a database version of the book of the same name which is compiled annually by the weekly listings mag.

Designed for the tourist or occasional visitor to the metropolis, it consists of names, addresses, telephone numbers and descriptions of virtually everything you could want to know.

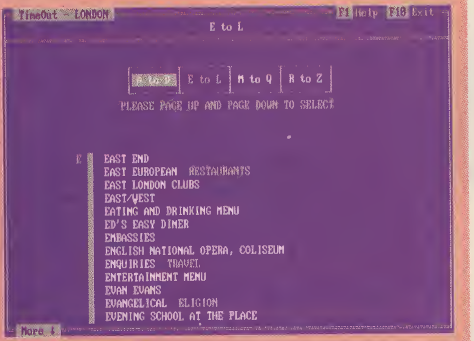
It covers accommodation, business services, children, eating and drinking, entertainment, the gay scene, health, information, museums, galleries, nightlife, services, shopping, sightseeing, sport, transport, and student life. All these subjects are accessed via a series of menus, which lead you clearly through the options until you eventually arrive at a scrolling list of names and addresses.

In addition to getting at the information by subject area you can use an alphabetical list of all the information covered, or you can access it by postcode to give you localised facts.


TimeOut ~ LONDON
F1 Help
F10 Exit
HOUSES OF PARLIAMENT
More ↓

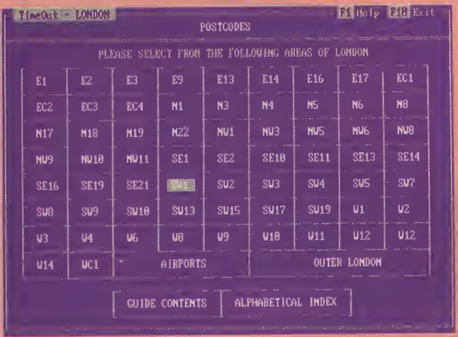
```
▸ Houses of Parliament
  Parliament Square,
  SW1

  (071 219 4[illegible]
  Westminster tube

  Pugin and Barry's 1837 architectural masterpiece and home of
  the British GOvernment.

  Open according to when the Houses of Parliament are in session
  House of Commons Visitors' Gallery from 2.30pm Mon-Thur, 9.30am-
  3pm Fri. House of Lords Visitors' Gallery from 2.30pm until
  debating ends Mon-Wed; from 3pm until debating ends Thur; 11am
  (approx) until debating ends Fri.

  * Admission free for both houses.

  For a guided tour (Mon-Thur only) or a seat at Prime Minister's
  Question Time you need to contact MP or Embassy to get a special
```

• At last you get to the information! The prices and telephone numbers which make up the guide will be updated annually, so Time Out recommends that you check the details.


TimeOut ~ LONDON
F1 Help
F10 Exit
E to L
A to D
E to L
M to Q
R to Z
PLEASE PAGE UP AND PAGE DOWN TO SELECT
More ↓

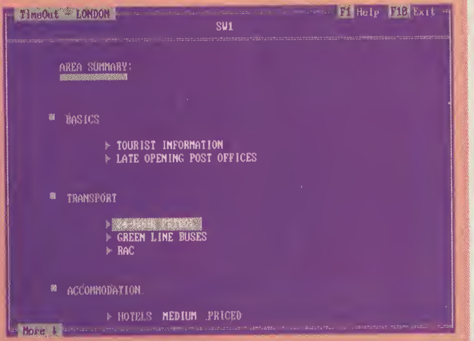
```
E   EAST END
    EAST EUROPEAN  RESTAURANTS
    EAST LONDON CLUBS
    EAST/WEST
    EATING AND DRINKING MENU
    ED'S EASY DINER
    EMBASSIES
    ENGLISH NATIONAL OPERA, COLISEUM
    ENQUIRIES  TRAVEL
    ENTERTAINMENT MENU
    EVAN EVANS
    EVANGELICAL  ELIGION
    EVENING SCHOOL AT THE PLACE
```

• Alternatively you can access the information in an alphabetical index, if you know the name of a particular restaurant or nightclub.


TimeOut ~ LONDON
F1 Help
F10 Exit
POSTCODES
GUIDE CONTENTS
ALPHABETICAL INDEX

```
PLEASE SELECT FROM THE FOLLOWING AREAS OF LONDON

E1    E2    E3    E9    E13   E14   E16   E17   EC1
EC2   EC3   EC4   N1    N3    N4    N5    N6    N8
N17   N18   N19   N22   NW1   NW3   NW5   NW6   NW8
NW9   NW10  NW11  SE1   SE2   SE10  SE11  SE13  SE14
SE16  SE19  SE21  SW1   SW2   SW3   SW4   SW5   SW7
SW8   SW9   SW10  SW13  SW15  SW17  SW19  W1    W2
W3    W4    W6    W8    W9    W10   W11   W12   W12
W14   WC1         AIRPORTS          OUTER LONDON
```

• In yet another option, you can choose to look at a particular area of the city, broken down by the postcode. A breakdown by named area might be more useful to the tourist.


TimeOut ~ LONDON
F1 Help
F10 Exit
SW1
More ↓

```
AREA SUMMARY:

■ BASICS

      ▸ TOURIST INFORMATION
      ▸ LATE OPENING POST OFFICES

■ TRANSPORT

      ▸ 24-HOUR PETROL
      ▸ GREEN LINE BUSES
      ▸ RAC

■ ACCOMMODATION

      ▸ HOTELS  MEDIUM  PRICED
```

• Within each area you are shown a complete list of the facilities available in the locality. Selecting one will take you the the information.

There is a lot of information here; certainly enough for the casual visitor. The only real weak spot is the eating and drinking section, which is not as comprehensive as it might be. This could be because another in the series covers eating and drinking exclusively and the publisher wants you to buy that disk as well. Or I could be getting cynical in my old age.

The main question with this software has to be how useful it would be. Not in terms of the information it contains – that is undoubtably useful – but whether the format of a PC disk is more convenient than a book.

The answer to that depends on the way you work; if you habitually take a notebook PC with you, you will find that *The Time Out London Guide* is a handy thing to have around, say on a business trip to the city. For those of us with desk-bound PCs it may well be a sensible reference guide to use before making a trip, but is less useful than a book which you can pocket.

I can see this kind of disk-based directory catching on for business people who work all day on computers. For the rest of us the old reference book, pen and paper method is cheaper, and ultimately more convenient. ■

The Time Out London Guide 1991 *is published by Time Out Publications for £19.95. It is available on PC disk, and will work on any machine. Annual updates are available. Other titles in the series which will be released in the coming months include* Eating and Drinking in London, Amsterdam Guide, Frankfurt Guide, New York Guide *and* Paris Guide. *Time Out Publications is on 071-729 5959.*

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- SUPER SKI CHALLENGE
- VINDICATORS

- VOYAGER
- KID GLOVES
- COLORADO
- COMMANDOS
- TRACK SUIT MANAGER
- WANTED
- BAD COMPANY
- CHAMPIONSHIP WATER SKI

- BRIAN CLOUGH FOOTBALL
- TRIVIAL PURSUIT
- HOLE IN ONE GOLF
- ALIEN LEGION
- GENIUS
- LASER SQUAD
- BUFFALO BILL'S RODEO GAMES
- OBLITERATOR

To enter, just circle the correct answers to these questions

Which game does NOT involve shooting aliens?
A) Xenon II
B) Outrun
C) Gemini Wing

2) Which of these is an adventure game?
A) Rick Dangerous
B) Atomix
C) Jinxter

3) Where does the word Amiga originate?
A) Huddersfield
B) Spain
C) Italy

4) Which of these is a software house?
A) Microprose
B) Microscope
C) Micromedia

5) How many bytes are there in 1 Kilobyte?
A) 1000
B) 1128
C) 1024

AND RETURN ENCLOSING CHEQUE OR POSTAL ORDER TO THE VALUE OF JUST £10.00 MADE PAYABLE TO
COLIN SMITH ENTERPRISES, 338 RAKE LANE, CLIFTON, SWINTON, MANCHESTER. M27 2LJ

PLEASE COMPLETE IN BLOCK CAPITALS:

NAME ....

ADDRESS ....

....

POST CODE .... TEL. No ....

PLEASE STATE GAME FORMAT ....

NAME OF PREFERRED FREE GAME ....

PLEASE STATE PREFERRED MAIN PRIZE ....
Tie breaker (complete in five words or less)
I think the title for the ultimate arcade game of all time should be:

....

COMPETITION ENTRY FEE ONLY £10.00

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Superbreakout - Egyptian Run - Bullrun - Hack - Q-Bert

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Arcade, Mardol, Shrewsbury SY1 1PS

Access

SUBJECT TO AVAILABILITY

VISA

GETTING TO KNOW YOU

So here we are, The *Express* Questionnaire. To make it worth your while to use a stamp we are giving away five free subscriptions to the readers who come up with the best and most original idea for an *Express* feature. But that's not all; the winners of the *Express* subscriptions also win a year's copies of the Future magazine of their choice – select from *Amiga Format, ST Format, PC Plus, Commodore Format, Your Sinclair, S* and *Amstrad Action.*

To have a chance of winning you'll need to get your questionnaire back to us by November 23. Send it in an envelope marked *'Express Questionnaire'* to *New Computer Express*, 30 Monmouth Street, Bath, Avon BA1 2BW.

Here at *Express* we thought it was time we got to know you better, so we could give you more of what you want and less of what you hate to read. Plus, if you co-operate, you stand the chance of getting it all for nothing!

SECTION ONE: HARDWARE

What machine do you use the most at home?

Amiga 500 ☐
Other Amiga ☐
ST ☐
STE ☐
Desktop PC ☐
Laptop PC ☐
Archimedes ☐
CPC ☐
Spectrum ☐
C64 ☐
Console ☐
Macintosh ☐

Other (specify)..

What machine do you use the most at work/college?

Amiga 500 ☐
Other Amiga ☐
ST ☐
STE ☐
Desktop PC ☐
Laptop PC ☐
Archimedes ☐
CPC ☐
Spectrum ☐
C64 ☐
Macintosh ☐
Mini/mainframe ☐

Other (specify)..

What other machines do you have at home?

Amiga 500 ☐
Other Amiga ☐
ST ☐
STE ☐
Desktop PC ☐
Laptop PC ☐
Archimedes ☐
CPC ☐
Spectrum ☐
C64 ☐
Macintosh ☐
MSX ☐
BBC Micro ☐
PCW ☐
Atari 8-bit ☐
Console ☐

Other (specify)..

What other machines do you use at work/college?

Amiga 500 ☐
Other Amiga ☐
ST ☐
STE ☐
Desktop PC ☐
Laptop PC ☐
Archimedes ☐
CPC ☐
Spectrum ☐
C64 ☐
Macintosh ☐
Mini/mainframe ☐

Other (specify)..

How long have you owned your computer?

Less than three months ☐
Three months to a year ☐
One to three years ☐
Over 3 years ☐

What peripherals do you own?

Monitor ☐
Hard disk ☐
Extra floppy drive ☐
Modem ☐
Printer ☐
Memory expansion ☐
Scanner/digitiser ☐
Sampler/MIDI ☐
Multiface/Action Replay ☐
Joystick ☐

What peripherals do you intend to buy in the next year?

Monitor ☐
Hard disk ☐
Extra floppy drive ☐
Modem ☐
Printer ☐
Memory expansion ☐
Scanner/digitiser ☐
Sampler/MIDI ☐
Multiface/Action Replay ☐
Joystick ☐

How much did you spend on hardware last year/last two months?

	Two months	Year
Less than £50	☐	☐
£50-£150	☐	☐
£150-£300	☐	☐
Over £300	☐	☐

How often do you buy goods mail order?

Regularly ☐
Sometimes ☐
Never ☐

How many times have you bought through *Express* advertisements?

....

How do you buy your hardware? (tick all used in the last year)

Independent retailer ☐
High Street store (Dixons etc) ☐
Mail Order ☐
Auctions ☐
Classified advertisements ☐

How much do you expect to spend next year/next two months?

	Two months	Year
Less than £50	☐	☐
£50-£150	☐	☐
£150-£300	☐	☐
Over £300	☐	☐

Are you responsible for computer buying decisions at work?

Yes ☐
No ☐

Do you intend to buy a new computer in the next year? If so, what?

No computer ☐
Amiga 500 ☐
Other Amiga ☐
ST ☐
STE ☐
Desktop PC ☐
Laptop PC ☐
Archimedes ☐
CPC ☐
Spectrum ☐
C64 ☐
Macintosh ☐
Console ☐

Other (specify)..

In an ideal world, which of these computers would you most like to own?

Amiga 500 ☐
Other Amiga ☐
ST ☐

STE ☐
Desktop PC ☐
Laptop PC ☐
Archimedes ☐
CPC ☐
Spectrum ☐
C64 ☐
Macintosh ☐
NeXT ☐

Other (specify)..

SECTION TWO: SOFTWARE

What do you use your computer for at home?

	Main use	Sometimes
Games	☐	☐
Word processing	☐	☐
Spreadsheet/accounts	☐	☐
DTP	☐	☐
Graphics	☐	☐
Music	☐	☐
Education	☐	☐
Programming	☐	☐
Comms	☐	☐

What do you mainly use your computer for at work/college?

	Main use	Sometimes
Games	☐	☐
Word processing	☐	☐
Spreadsheet/accounts	☐	☐
DTP	☐	☐
Graphics	☐	☐
Music	☐	☐
Education	☐	☐
Programming	☐	☐
Comms	☐	☐

How much have you spent on games in the last year/last two months?

	Two months	Year
Less than £50	☐	☐
£50-£150	☐	☐
£150-£300	☐	☐
Over £300	☐	☐

How do you buy your games? (tick all used in the last year)

Independent retailer ☐
High Street store (Dixons etc) ☐
Mail Order ☐
Dodgy street markets ☐
Classified advertisements ☐

How much do you expect to spend next year/next two months on 'serious' software?

	Two months	Year
Less than £50	☐	☐
£50-£150	☐	☐
£150-£300	☐	☐
Over £300	☐	☐

How do you buy your 'serious' software? (tick all used in the last year)

Independent retailer ☐
High Street store (Dixons etc) ☐
Mail Order ☐
Classified advertisements ☐

Do you use PD libraries?

Yes ☐
No ☐

SECTION THREE: MAGAZINES

How long have you been reading *NCE*?

This is the first issue bought ☐
A few months ☐
A year or so ☐
Since the beginning ☐

How regularly do you buy NCE?

Subscriber ☐
Every week ☐
Two or thee times a month ☐
Once a month ☐
Occasionally ☐

What was you favourite article in this issue?

....

Rate the following sections of *Express* out of 10

News ☐
FrontEnd ☐
The Week in View ☐
Hardware reviews ☐
Software reviews ☐
Feature articles ☐
Games Week ☐
Competitions ☐
Machine-specific columns ☐
Express mail ☐
Centrefold ☐
Programming ☐
Circuit City ☐
Tech Tips ☐
PD Column ☐
Console Zone ☐
Whole Wired World ☐
Express On-line ☐
Reader advertisements ☐
Recruitment advertisements ☐

Which sections would you like to see more or less of?

	More	Less
News	☐	☐
FrontEnd	☐	☐
The Week in View	☐	☐
Hardware reviews	☐	☐
Software reviews	☐	☐
Feature articles	☐	☐
Games Week	☐	☐
Competitions	☐	☐
Machine-specific columns	☐	☐
Express mail	☐	☐
Centrefold	☐	☐
Circuit City	☐	☐
Tech Tips	☐	☐
Programming	☐	☐
PD Column	☐	☐
Console Zone	☐	☐
Whole Wired World	☐	☐
Express On-line	☐	☐
Reader advertisements	☐	☐
Recruitment advertisements	☐	☐

What other magazines do you read apart from *Express*?

Amiga Format ☐
ST Format ☐
PC Plus ☐
Amstrad Action ☐
Commodore Format ☐
Your Sinclair ☐
ACE ☐
The One ☐
Zero ☐
Raze ☐
Personal Computer World ☐
Byte ☐
What Personal Computer? ☐
Popular Computing Weekly (sorry, bad joke)

What do you like about them compared to *Express*?

....

....

SECTION FOUR: ABOUT YOU

All personal details will be treated in confidence.

Are you male or female?

Male ☐
Female ☐

How old are you?

Under 13 ☐
13-18 ☐
17-25 ☐
26-35 ☐
36-50 ☐
Over 50 ☐

What is your job?

....

How much do you earn?

Nothing ☐
Student grant ☐
£5,000-£8,000 ☐
£8,001-£10,000 ☐
£10,001-£15,000 ☐
Over £15,000 ☐

What county do you live in?

....

SECTION FIVE: PRIZE COMPETITION

My suggestion for a really good article in *Express* is (max 50 words)

Name ....

Address ....

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If I win I would like a subscription to *New Computer Express* and:

ST Format ☐
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★ POCKET SIZED ★ PC-COMPATIBLE ★ PERSONAL ORGANISER ★

ATARI Portfolio

THE PC IN YOUR POCKET

The new Portfolio from Atari is the world's first pocket-sized electronic organiser that is also a powerful PC compatible computer, with a full QWERTY keyboard and scrolling 80×25 character display.

Portfolio includes everything you would expect from an electronic organiser - an address and telephone book, time manager, diary and sophisticated calculator.

Portfolio also includes several functions that you would not expect - a spreadsheet for your personal budget and expense records, as well as a text processor for typing memos and letters.

And, because Atari's Portfolio is PC compatible, it can communicate with your desktop PC at home, or in the office. You can transfer files from one to the other, to enable you to update your reports and figures with the Portfolio while you are on the move.

FOR ONLY **£199** INC VAT

SPECIFICATION

- ★ **Processor:** Intel 80C88 at 4.9152Mhz.
- ★ **Operating System:** Compatible with MS-DOS 2.11.
- ★ **Internal ROM:** 256K containing BIOS, operating system and applications suite.
- ★ **RAM:** 128K with an internal RAM disk, configurable from 8K. Externally expandable to 640K RAM.
- ★ **Keyboard:** 63 keys, QWERTY, IBM PC BIOS compatible. Buried numeric pad and function keys. Optional key click.
- ★ **Character Set:** Extended IBM ASCII (255 characters).
- ★ **Mass storage:** credit card sized memory cards (32K or 64K or 128K RAM).
- ★ **Display:** Graphics LCD, supertwist technology, MDA compatible, 40 columns x 8 lines, 240 x 64 pixels (with the option to window a full 80 x 25 character display). Keyboard controlled contrast.
- ★ **Peripherals:** 60 pin expansion BUS to take serial and parallel ports and memory expansion units.
- ★ **Size:** 8" x 4" x 1" (200mm x 105mm x 29mm).
- ★ **Weight:** 495 grammes (with batteries).
- ★ **Applications:** calendar and diary, address and phone book, Lotus 1-2-3 compatible spreadsheet, text processor, communications software.

COMING SOON!

In addition to the excellent software built-in to the Portfolio Free of Charge (see right), other software and peripheral products, such as the sophisticated Pocket Finance package and serial/centronics interfaces are available. And it doesn't stop there. Many manufacturers have recognised the potential of the Portfolio and have already started to design new peripherals and software. Products currently under development include: Serial interface with built in mini modem, Apple Macintosh interface, business, utility and programming software plus a range of adventure and battle strategy games. For further free details on the Portfolio range, fill in the coupon below and return it to Silica Systems now.

5 BUILT-IN APPLICATIONS TO GET YOU ORGANISED!

To get you started, Portfolio comes with a suite of five useful functions built-in, all accessible from a simple menu display.

TIME MANAGER

More than just an electronic diary, the Portfolio Time Manager enables you to plan your appointments via a comprehensive calendar and diary. It can even be programmed to sound an audible alarm at specific times to remind you of important appointments.

CALCULATOR

Your Portfolio will be invaluable in the office or at home as a powerful pocket calculator. It has a full range of functions, including factorial, power and root calculations, all with multi display formats and memories.

ADDRESS BOOK & DIALLER

Portfolio has a complete address book facility that allows you to store hundreds of addresses and phone numbers. And, at the touch of a button, you can retrieve any one of them, or search for a specific grouping, such as "all Italian restaurants". And, when you are ready to book your table, hold your Portfolio to your telephone mouthpiece and use its special built-in tone dialler to dial the number for you.

TEXT PROCESSOR

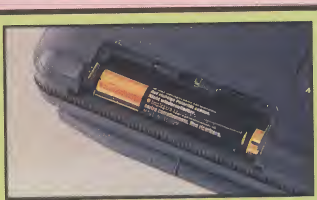
The Portfolio's built-in text processor program includes word wrap, line and column count, string search, in fact most of the functions you would find in a word processor. It handles printer and word processor control codes and allows easy transfer of files between Portfolio and your desktop PC.

SPREADSHEET

For real calculating power, Portfolio has a Lotus 1-2-3 compatible spreadsheet built-in. It has 127 columns x 225 rows and reads/writes Lotus V1.0 and V2.01 files, so you can transfer data to and from Lotus 1-2-3 on your desktop PC. The Portfolio's 256K ROM includes MS-DOS and PC BIOS compatible systems software.

MEMORY CARDS

Portfolio can store and retrieve data and programs from its own RAM, or from small credit card size memory cards, that slot into its built-in card drive. The cards are available in three sizes, 32K, 64K and 128K, so you can carry a library of data in your pocket. The card drive also accepts ROM cards, which can contain commercial or custom software.



POWER SUPPLY

Portfolio is powered by three AA batteries which will run for up to six weeks with normal use, or from the mains using an adaptor. All the peripherals take their power from the Portfolio, so no extra batteries or adaptors are required. A 'battery-low' warning and memory back-up ensure that information is not lost when the batteries are changed.

INTERFACES & PERIPHERALS

Portfolio can communicate with other computers and supports a growing range of peripherals via a built-in 60 pin bus connector. Peripherals available include serial and parallel interfaces and memory expanders (to 640K). You can also add a card drive to your desktop PC, to enable it to read/write to Portfolio's cards.

SILICA SYSTEMS OFFER YOU

FREE OVERNIGHT COURIER DELIVERY: On all hardware orders shipped in the UK.
TECHNICAL SUPPORT HELPLINE: Team of Atari technical experts at your service.
PRICE MATCH: We normally match competitors on a "Same product - Same price" basis.
ESTABLISHED 12 YEARS: Proven track record in professional computer sales.
£13M TURNOVER (with 60 staff): Solid and reliable with maintained growth.
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PAYMENT: By cash, cheque and all major credit cards.
CREDIT PAYMENT TERMS: Silica are licensed credit brokers - details on request.

Before you decide when to buy your new Atari Portfolio, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Portfolio, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new Portfolio products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is a new division of Silica Shop, the UK's leading Atari specialists. This new division has been established to provide a service to the more serious home user, as well as to business and education purchasers. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature and begin to experience the "Silica Systems Service".

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PLEASE SEND INFORMATION ON PORTFOLIO

Mr/Mrs/Ms: .... Initials: .... Surname: ....

Address: ....

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Postcode: ....

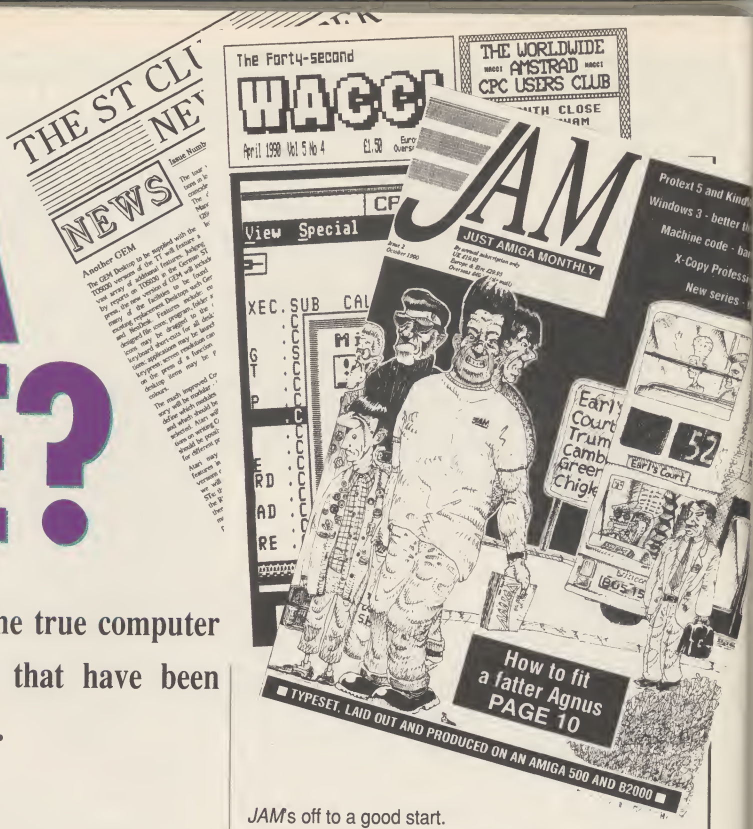
Tel (Home): .... Tel (Work): ....

Company Name: ....

Which computer(s), if any, do you own? ....

E&OE - Advertised prices and specifications may change - please return the coupon for the latest information.

FANCY A FANZINE?


THE ST CLUB NEWS
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THE WORLDWIDE AMSTRAD CPC USERS CLUB
View Special
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Machine code - ba
X-Copy Profess
New series
How to fit a fatter Agnus PAGE 10
TYPESET, LAID OUT AND PRODUCED ON AN AMIGA 500 AND B2000

Fanzines fill in where other magazines leave off for the true computer enthusiasts. Keith Pomfret flicks through a couple that have been around for some time and one which is just starting out.

If you've arrived at the point where you buy every magazine that covers the format of your computer and are still left thirsty for knowledge, you're in the black hole twixt magazine and fanzine. Large circulation magazines cater for the majority, but can never delve into the nooks and crannies that a true enthusiast treads.

The fanzine is normally born of need. A couple of enthusiasts mull over subjects not covered in enough depth in the magazines and agree that something ought to be done about it. Over the past ten years, each machine has spawned its fair share of fanzines, some professional looking, some no more than a couple of duplicated sheets.

They all have one thing in common – raw enthusiasm. This may wane or grow depending on the interest shown and the quality of information. It's never been an easy job for the editor of a fanzine. These operations grow on a shoestring and initially have to rely on the enthusiasm, willingness and timekeeping(!) of the writers. These selfless hacks often scribble thousands of words for no more payment than a few words of encouragement and seeing their prose in print.

Up against the odds, fanzines do an excellent job and quench the insatiable thirst for facts and knowledge of the enthusiast.

Illustrations take second place in most fanzines, but that doesn't seem to bother the readers who seem to prefer facts to pictures anyway.

New on the fanzine scene is *JAM*. Almost stillborn in Birmingham by the disappearance of one of its co-founders, *JAM* (which stands for *Just Amiga Magazine*) picked up its skirts and moved to South Uxbridge where it is now under the capable control of Jeff Walker, original founder of WACCI.

A few years in professional journalism took Jeff from the Amstrad CPC to the Amiga. When he finished his spell with a publishing house, he recognised the need for a professionally-produced enthusiasts magazine for Amiga owners. These people, who wanted to travel past the joystick port and into serious territory where solder met machine code and hardware met applications, agreed.

Jeff set up shop in Birmingham with a partner, persuaded all his former staff and colleagues to help with a bit of free writing and issue one rolled off the desktop.

JAM is produced entirely using Amigas, a DTP package and an inkjet printer. Jeff said: "I wanted to do the magazine on kit that a serious Amiga user might have, or at least have access to."

As issue one appeared, Jeff's partner took to the high road and hasn't been seen since. All of the equipment and paperwork was spirited back down the M1 in the dead of night and issue two was written, conceived and performed by Jeff and his pet armadillo, Morgan. Issue two looks better than issue one and after a period of trying to find paper suited to the inkjet printer (Canon BJ-130) the print quality is acceptable.

Problems with paper caused a bit of smudge and blot, but the fine balance between Andrex and Izal has been reached. (*Now wash your hands please – Ed.*)

JAM benefits from a brilliant art person in the shape of Dave Mee, a voluntary letter opener called Sami Nillson and a contributors list that reads like the invitations to Commodore's latest launch.

Even the letters page (which is always suspicious in a new mag) has what looks to be real letters. Good luck and hand shakers in the main, so it looks like *JAM*'s off to a good start.

For those of you who missed the current issue, there's still time to send Jeff a couple of quid for a sample copy and to whet your appetite, here's what's in it.

News, Showtime (diary), letters, Fitting Fatter Agnus, Copper fixing, PD, Windows 3.0 vs AmigaDOS, modem stuff, monitor vs TV, books, reviews, obscure CLI stuff and Backchat.

WACCI

The Worldwide Amstrad CPC users club, known as WACCI, is on its 47th issue and has been around for four years. Conceived and founded by Jeff Walker, it is the only CPC fanzine to last the full course and has recently taken the Amstrad PCW under its wing. Jeff eventually went on into full time computer journalism, leaving WACCI in the capable hands of Steve Williams who runs the mag, a PD library and mail order. For CPC and PCW users it is the only serious place to go once the information available on the news stands is no longer enough.

ST

The ST Club Newsletter is on its 32nd issue and combines a DTP format with a digest of news, opinion, features reviews and most important, feedback from members in a lively letters page. In some ways it is the least lively of the three, its good design being held back by a lack of illustrations. However, it seems to be what the readers want or it wouldn't have lasted so long. PC and Mac emulators are currently in the ST news and as well as covering the ST's use as it comes, this lively fanzine looks at the machine in its metamorphosis to other machines under emulation. ■

THE FANZINE FACT FILE

WACCI

Editor	Steve Williams
Address	9 South Close, Twickenham TW2 5JE
Phone	081-898 1090
Machines	Amstrad CPC464, 664, 4128, 6128 and PCW series
Cost	£18 per year. Send £2 for sample including P&P
Format	A4 produced on CPC6128 and PCW using *Protext*
Size	40 pages (April 1990) varies

ST CLUB NEWSLETTER

Editor	Paul Glover
Address	49 Stoney St, Nottingham NG1 1LX
Phone	0602 410241
Machines	All Atari STs
Cost	£8 per year
Format	A4 produced on STs *Timeworks, Calamus, Pagestream*
Size	28 pages (October 1990)

JAM (JUST AMIGA MONTHLY)

Editor	Jeff Walker
Address	75 Greatfields Drive, Hillingdon, Uxbridge UB8 3QN
Phone	0895 74449
Machines	All Amigas
Cost	£19.95 per year
Format	A4 produced on A500 and B2000 using *Page Setter*
Size	40 pages (Oct 1990) varies

THE ATARI ABC

Now, there's a PC-AT compatible that not only solves problems like other AT compatibles, it also solves the one problem that its predecessors have created … affordability.

Silica Systems are pleased to present the new Atari ABC. The ABC is a 286 AT compatible that runs at over 5 times the performance of the IBM XT. This is achieved by combining the power and speed of a 16-bit 286 processor, with Atari Corp's development experience and engineering capabilities, which use the very latest in design technology. However, the Atari ABC's are available at 'XT prices' and many XT owners will wonder why they paid more, but got less!

The ABC is a reliable, high performance computer, built to exceptionally rigorous standards. It is well designed, to a state of the art specification, maintaining maximum expansion capability for the future. This includes up to 4Mb of RAM and 3 AT expansion slots. Plus, unusually for a PC at this price, the ABC has the ability to install two or three extra drives, with the cabling already inside the CPU.

The ABC has a host of impressive features, all built-in as standard, encouraging simple installation and ease of use. In addition, the ABC's small footprint and quiet operating, mean that you will notice it less on your desk than other PC's. Except, of course, when you begin to take advantage of its AT power.

At its remarkably low price point, the ABC is ideally suited for home, office and educational use and will take full advantage of the vast range of PC compatible software. And, with 12 months FREE on-site maintenance (8 hour response), you can rest assured that your ABC will be fully supported.

The ABC is the latest addition to a comprehensive range of both 286 (8Mhz or 12Mhz) and 386 (16Mhz and 20Mhz) PC's, from the Business Systems Division of Atari Corp. Atari's PC range offers an unsurpassed combination of reliability, compatibility and expandability, with unique features like Atari's 44Mb removable hard disk on their PC4. Return the coupon NOW for further details of the complete range of PC products from Atari's Business Systems Division.

ABC TURBO
AVAILABLE: JUNE 90

To put the ABC even further ahead of the competition, we have introduced a special 'Turbo' version, which includes a super fast RLL hard disk controller to increase the data transfer rate from 150KBytes/s to 800KBytes/s, with a performance index of 4.801. Plus! to provide exceptional graphics with an outstanding colour resolution of up to 1024×768, we have included a Super VGA graphics adaptor and a 14″ VGA colour monitor (which also supports 1024×768 resolution), all for an additional price of only £300. Check the ABC Turbo against the competition, at only £1299 (+VAT) with 30Mb hard disk, Super VGA colour graphics capabilities, plus 12 months on-site maintenance, it offers unbeatable value.

LOW PRICE - HIGH SPEC!

CPU+MOTHERBOARD
- 8Mhz 80286 16-bit CPU
- Landmark Speed = 10.3Mhz, Norton SI Test = 9.0
- Latest NEAT (New Enhanced AT) technology chip set
- Has user selectable bus, DMA speeds & wait states
- Programmable to operate at 0 or 1 wait states
- 640K RAM base memory (expandable)
- Motherboard expandable to 4Mb RAM memory
- Real time clock with battery back-up
- Full 16-bit data line capability
- Socket for 80287-8 numeric Co-Processor
- 3 16-bit AT expansion slots (max)

DISK
- 32Mb RLL hard disk - 150KBytes/s transfer - 60ms access
- Fast disk controller - 800KBytes/s transfer - *Turbo version*
- 1.44Mb built-in 3½″ floppy disk drive
- Space for two 5¼″ and two 3½″ drives (max)

I/O
- Parallel port built-in (25-pin Centronics)
- Serial port built-in (9-pin RS-232)
- Mouse controller port built-in (9-pin serial)

GRAPHICS
- Super VGA video graphics controller - *512K - Turbo vers*
- Super VGA: 256 colours in 800×600 res - *Turbo vers*
- EGA video graphics controller built-in
- EGA: 16 colours available from a palette of 64
- EGA: 256K of dedicated Video RAM built-in
- MDA, CGA and Hercules graphics controller built-in

PHYSICAL
- Low noise operation
- Ergonomic small footprint (38cm×41cm×15cm)
- Keyboard - 102 key enhanced AT (12 function keys)
- Keyboard - has 2 position height adjusters

PLUS!
- Fully OS/2 compatible (requires 4Mb RAM)
- Supports Industry Standard Networks
- MS-DOS 3.3 with GW BASIC 3.22
- 12 Months FREE on-site maintenance included

286 AT

WITH 30Mb HARD DISK & EGA MONITOR - £899

FREE! - ON-SITE MAINTENANCE
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100% QUALITY CONTROL: Every ABC is tested/burnt-in before despatch.
FREE OVERNIGHT COURIER DELIVERY: On all hardware orders shipped in the UK.
ESTABLISHED 12 YEARS: Proven track record in professional computer sales.
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PRICE MATCH: We normally match competitors on a "Same product - Same price" basis.
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FREE CATALOGUES: Will be mailed to you with offers and software/peripheral details.
PAYMENT: Cash / cheque / credit card / credit - we are licensed credit brokers - details on request.

Before you decide when to buy your new Atari ABC, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your ABC, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new ABC products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is a new division of Silica Shop, the UK's leading Atari specialists. This new division has been established to provide a service to the more serious home user, as well as to business and education purchasers. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature and begin to experience the "Silica Systems Service".

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Address: ....

....

.... Postcode: ....

Tel (Home): .... Tel (Work): ....

Company Name: ....

Which computer(s), if any, do you own? ....

E&OE - Advertised prices and specifications may change - please return the coupon for the latest information.

WIN! AN ARCHIMEDES LEARNING CURVE

Three runners-up prizes of free tickets to the computer show

New Computer Express and Acorn computers have teamed up to bring you an offer you cannot refuse. You are now a mere 10 questions away from the possibility of winning an Acorn Archimedes Learning Curve package. This comprises the following:

An Acorn Archimedes A3000 computer. That's RISC-based superfast technology which utilises the power of the ARM2 processor. The Arc – as it's known to those people lucky enough to own one – features some of the most powerful software available to the home or professional user.

£400 – worth of software to run with your new machine. This includes *Genesis*, a multi-tasking desktop application, *FirstWord Plus,* not surprisingly a word processor, and there is also a PC emulator.

If you win the competition (and let's face it the way your luck has been going you probably will... well things can only get better for you can't they?) you will pick up the prize at the forthcoming *Computer Shopper* Show. You'll probably get your picture taken and put in the Centrefold pages in *Express*, gorgeous people will come knocking at your door.

All you have to do is answer the following five questions this week, answer another five the week after and then send them in on the coupon which we will also be publishing next week. Easy.

So now with no further ado, the questions:

1) Archimedes was
A) Greek
B) Roman
C) Liverpudlian

2) Archimedes was known for his
A) Hammer
B) Screw
C) Bolt

3) Archie Gemmil played for which country?
A) Ireland
B) America
C) Scotland

4) Noah's Arc was measured in what?
A) Feet
B) Cubits
C) Metres

5) *Raiders of the Lost Arc* starred
A) Sean Connery
B) Mel Gibson
C) Harrison Ford

There you go. Don't send your answers in yet, wait until next week. Good luck and try not to be too smug if you win. ■

WINNERS

**Remember the train simulation comp? Well sorry about the final question. Two sackings took place over that one. Anyway, the winners are as follows.
John Witchard, Chippenham; Paul Wilson, Porchester; C Mason, Bacup. Most people got the last questionright as Mallard. Everyone who got the first three correct were put into the hat.**

COMPUTER SHOPPER SHOW '90
Wembley, London • 6-9 December

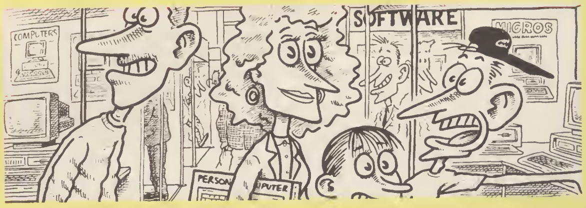
Only one voucher per person

Photocopies not valid

50p OFF

Or alternatively worth £4 off a family ticket
Thursday 10am – 6pm, Friday 10am – 6pm
Saturday 9am – 6pm, Sunday 10am – 5pm

GO TO THE SHOW WITH STYLE

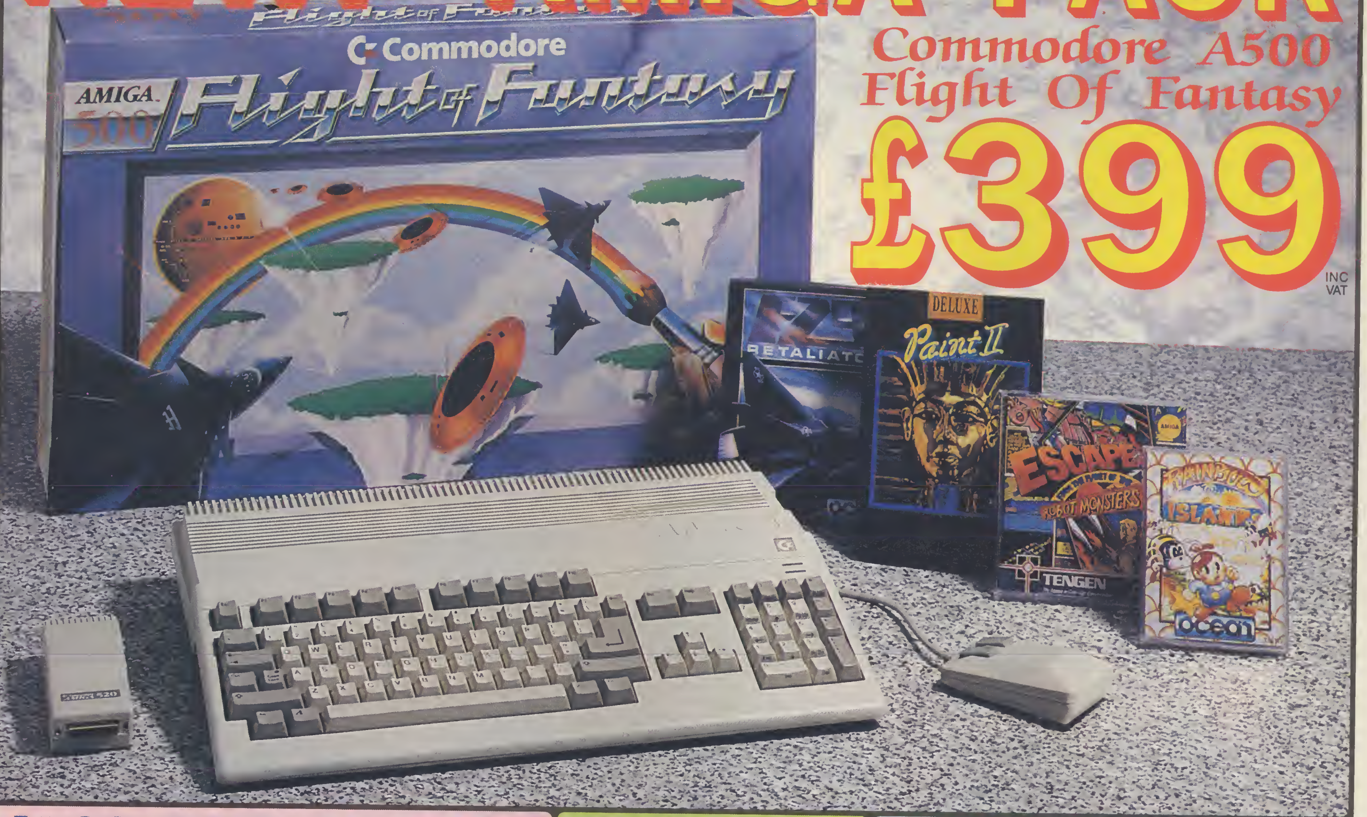


The *Computer Shopper* Show will be held at the Wembley Conference Centre this year. It runs from 6-9 December and includes a whole host of goodies for the computer user. Featured at the show will be an Acorn Village and the Acorn Conference.

At the conference will be many speakers of distinction. For example you will be shown the wonders of the Archimedes' RISC technology by the Acorn development team. There will a hypermedia presentation by Software Solutions' founder David Tee. There will be the first offical showing of the Genesis 2 system. Frankly there will be loads to see and do, and you can have all of this for 50p cheaper than usual.

RETURN THE COUPON FOR FREE COLOUR BROCHURES!

NEW! - AMIGA PACK



Commodore A500
Flight Of Fantasy
£399 INC VAT

A500 BATMAN PACK

Commodore
AMIGA
500
BATMAN PACK
ocean
ELECTRONIC ARTS

The Commodore A500 Batman Pack must surely rank as one of the most popular computer packs ever! The pack features the **Commodore Amiga 500 computer** with **mouse controller** and **TV modulator**, plus four top software titles. The software includes: **'Batman The Movie'** - Rid Gotham City of the cunning joker, in Ocean's top selling title based on the blockbuster Batman film; **New Zealand Story** - high quality conversion of the leading arcade game; **Interceptor** - Dogfight with two F-16's in this leading flight simulator; **Deluxe Paint II** - top quality Amiga graphics package which set the standard for others to follow. Return the coupon for further details.

PACK INCLUDES:

A500 Computer & Mouse	£399.99
A520 TV Modulator	£24.99
Batman The Movie	£24.95
New Zealand Story	£24.95
Interceptor	£24.95
Deluxe Paint II	£49.95
TOTAL RRP:	£549.78
Less Pack Saving:	£150.78
PACK PRICE:	**£399.00**

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